

# Semiempirical Shell Model Tabulated Masses for Translead Elements with Magic Proton Number $Z = 126$ \*

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We present two tables of calculated masses of translead nuclei, for 351 nuclei with  $94 \leq N \leq 126$ ,  $82 \leq Z \leq 100$  and for 1969 nuclei with  $126 \leq N \leq 184$ ,  $82 \leq Z \leq 126$ . The tables are calculated from a semiempirical shell-model mass equation based on  $Z = 126$  as a proton magic number which seems to be highly extrapolatable inside shell regions. Useful separation and decay energies are given as well. Some properties of the calculated masses and applications to superheavy elements are indicated in the introduction.

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## INTRODUCTION

### 1. Overview

The present mass tables are offered as a substitute and extension for translead nuclei of the semiempirical shell-model mass equation (SSME) table presented in ref. [1]. They have both been calculated in the same framework of the semiempirical shell model [2], with the

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difference that here the major proton valence shell beyond lead extends through  $Z = 126$  rather than  $Z = 114$ . This extends the range of applicability of the equation from  $Z = 114$  to  $Z = 126$ .

The need to go beyond  $Z = 114$  arises from recent experimental results on superheavy elements (SHE) [3], where the nucleus  $^{293}118$  was presumably formed and  $\alpha$ -decayed sequentially down to  $^{265}\text{Rf}$  ( $Z = 104$ ), with  $\alpha$ -decay energies varying rather smoothly along the chain. If the results are confirmed, and the decaying nuclei are formed in or near their ground states (g.s.), then the smooth variation seems to preclude the traditional macroscopic-microscopic [4,5]  $Z = 114$  as a major proton magic number in these nuclei, and suggests that all of them belong to the same major proton valence shell extending up to  $Z = 118$  or beyond.

Moreover, the SSME [1] which adopts  $Z = 114$  as an upper proton shell boundary and stops there becomes unsuitable for extrapolation to higher  $Z$ -values already earlier, beyond Hs ( $Z = 108$ ), as shown by its increasing deviations from the data when  $Z$  increases [3,6].

Which is the major spherical proton magic number after lead? During the early stages of developing the SSME [7], when it was adjusted separately in individual shell regions in the  $N - Z$  plane, both  $Z = 114$  and  $Z = 126$  were considered possible alternative candidates for the post lead proton magic number [8]. They were both tried as a shell boundary in each of the two heaviest regions with  $Z \geq 82$  and respective  $N$  boundaries  $82 \leq N \leq 126$  (called here region A) and  $126 \leq N \leq 184$  (called region B). The agreement with the data was about the same for both choices, and the prevailing view in the mid nineteen-seventies led to the choice of  $Z = 114$  for the SSME mass table.

When the  $Z = 118$  results were obtained the SSME [1] could not reproduce them [3] but the early  $Z = 126$  results agreed with them rather well [9]. Phenomenological studies of  $B(E2)$  systematics [10] likewise indicate a superior magicity of  $Z = 126$  as compared to  $Z = 114$ , and the plausibility of  $Z = 126$  as a spherical proton magic number after lead is indicated as well by the persistence of the Wigner term in masses of heavy nuclei [11]. The masses presented in the present tables have been calculated on this assumption. For region B they are the same as calculated in ref. [7]. For region A a partial readjustment of the coefficients was found necessary [12] (see sect. 3).

Recent self-consistent (SC) and relativistic mean field calculations [13–15] variously predict proton magicity for  $Z = 114, 120, 124$  and  $126$ , depending on the interaction used. In this connection it is worthwhile emphasizing that the rather suggestive agreement with the data obtained with  $Z = 126$  is not a proof of superior magicity of  $Z = 126$  as compared to  $Z = 120$  or  $124$ , because no comparative mass studies of this kind were made.

The rest of the Introduction is organized as follows: The mass equation is presented in sect. 2. Sect. 3 addresses its extrapolatability and sect. 4 considers its smoothness and continuity. Finally, sect. 5 briefly illustrates some applications to SHE.

## 2. The Mass Equation

In the SSME the total nuclear energy in the g.s. is written [1,2] as a sum of pairing, deformation and Coulomb energies:

$$E(N, Z) = E_{pair}(N, Z) + E_{def}(N, Z) + E_{Coul}(N, Z) . \quad (1)$$

The form of  $E_{Coul}$ , which describes the Coulomb energy of the protons, is the same in

all shell regions:

$$E_{Coul}(N, Z) = \left(\frac{2Z_0}{A}\right)^{1/3} [\alpha^C + \beta^C (Z - Z_0) + \gamma^C (Z - Z_0)^2] . \quad (2)$$

The form of  $E_{pair}$ , which describes the energy of strongly interacting nucleon pairs in a lowest seniority approximation, is the same separately in all diagonal shell regions, where the major valence shells are the same for neutrons and protons, and in all non-diagonal regions, where they are different. Unlike in ref. [1], with  $Z = 126$  rather than 114 as an upper proton boundary region A becomes a diagonal region with

$$E_{pair}(N, Z) = \left(\frac{A_0}{A}\right) [\alpha + \beta (A - A_0) + \gamma (A - A_0)^2 + \varepsilon T (T + 1) + \frac{1 - (-1)^A}{2} \Theta + \frac{1 - (-1)^{NZ}}{2} \kappa] . \quad (3)$$

For the non-diagonal region B one has:

$$E_{pair}(N, Z) = \left(\frac{A_0}{A}\right) [\alpha + \beta_1 (N - N_0) + \beta_2 (Z - Z_0) + \gamma_1 (N - N_0)^2 + \gamma_2 (Z - Z_0)^2 + \gamma_3 (N - N_0)(Z - Z_0) + \frac{1 - (-1)^N}{2} \Theta_1 + \frac{1 - (-1)^Z}{2} \Theta_2 + \frac{1 - (-1)^{NZ}}{2} \mu] . \quad (4)$$

The part  $E_{def}$  describes additional negative energy due to configuration interaction, largely with pair breaking and deformation. For region A it is given by [7,12]

$$E_{def}(N, Z) = \left(\frac{A_0}{A}\right) [\varphi_{11} \Phi_{11}(N, Z) + \psi_{20} [\Psi_{20}(N, Z) + \Psi_{20}(Z, N)]] \quad (5)$$

with

$$\Phi_{11}(N, Z) = (N - 82)(126 - N)(Z - 82)(126 - Z) , \quad (6)$$

$$\Psi_{20}(N, Z) = (N - 82)^2 (126 - N)^2 (N - 104) . \quad (7)$$

For region B it is given by [7,9]

$$E_{def}(N, Z) = \left(\frac{A_0}{A}\right) [\varphi_{21} \Phi_{21}(N, Z) + \varphi_{31} \Phi_{31}(N, Z) + \chi_{12} X_{12}(N, Z)] \quad (8)$$

with

$$\Phi_{21}(N, Z) = (N - 126)^2 (184 - N)^2 (Z - 82)(126 - Z) , \quad (9)$$

$$\Phi_{31}(N, Z) = (N - 126)^3 (184 - N)^3 (Z - 82)(126 - Z) , \quad (10)$$

$$X_{12}(N, Z) = (N - 126)(184 - N)(N - 155)(Z - 82)^2 (126 - Z)^2 (Z - 104) . \quad (11)$$

In eqs. (2)-(5) and (8)  $A = N + Z$  and  $T = |T_z| = \frac{1}{2}|N - Z|$ <sup>1</sup>. The respective values of  $(N_0, Z_0, A_0)$  in regions A and B are (82, 82, 164) and (126, 82, 208). The coefficients multiplying the functions of  $N$  and  $Z$  are adjustable parameters determined by a least squares adjustment to the data, separately for region B [7] and for region A [7,12]. Their values are given in table I. The atomic mass excesses  $\Delta M(N, Z)$  are obtained by adding to the adjusted energies  $E(N, Z)$  the sum of nucleon mass excesses  $N\Delta M_n + Z\Delta M_H$ .

In region B the equation has 15 adjustable parameters and it has respective overall average and root-mean-square (rms) deviations of 13 and 156 keV from the 267 presently known masses, and corresponding -5 and 178 keV from the 231 known  $Q_\alpha$  values. In region A there are 11 adjustable parameters, and respective overall average and rms deviations of 2 and 246 keV from the 150 known masses, and 2 and 99 keV from the 109 known  $Q_\alpha$  values. More details are given in sect. 3.

Mass predictions calculated from the above equations for the respective regions A and B are given in tables A and B. Useful separation and decay energies connecting nuclei in the same region are given as well. The tables include particle-stable nuclei and proton-unstable ones a short distance beyond the even proton drip line.

TABLE I. Values of the coefficients of eq. (1) determined by adjustment to the data.

Region B [7]		Region A [7,12]	
Coefficient	Value (keV)	Coefficient	Value (keV)
$\alpha$	$-2.3859605 \times 10^6$	$\alpha$	$-1.987628 \times 10^6$
$\beta_1$	$-1.496441 \times 10^4$	$\beta$	$-2.4773664 \times 10^4$
$\beta_2$	$-3.3866255 \times 10^4$	$\gamma$	$-8.51085 \times 10^1$
$\gamma_1$	$3.022233 \times 10^1$	$\varepsilon$	$4.585496 \times 10^2$
$\gamma_2$	$2.811903 \times 10^1$	$\Theta$	$1.2183 \times 10^3$
$\gamma_3$	$-3.6159266 \times 10^2$	$\kappa$	$2.1937 \times 10^3$
$\Theta_1$	$8.16 \times 10^2$	$\alpha^C$	$7.968418 \times 10^5$
$\Theta_2$	$1.007 \times 10^3$	$\beta^C$	$2.032906 \times 10^4$
$\mu$	$-2.121 \times 10^2$	$\gamma^C$	$9.819137 \times 10^1$
$\alpha^C$	$8.111517 \times 10^5$	$\varphi_{11}$	$-4.794 \times 10^{-2}$
$\beta^C$	$2.0282913 \times 10^4$	$\psi_{20}$	$9.095 \times 10^{-4}$
$\gamma^C$	$1.0930065 \times 10^2$		
$\varphi_{21}$	$-9.87874 \times 10^{-5}$		
$\varphi_{31}$	$3.13824 \times 10^{-8}$		
$\chi_{12}$	$-1.428529 \times 10^{-7}$		

### 3. Extrapolatability of the Mass Equation

We discuss extrapolatability by considering the new data measured after the 1973 ad-

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<sup>1</sup>In the as yet unknown odd-odd  $N = Z$  translead nuclei the g.s. is expected to have  $T = |T_z| + 1$  and seniority zero, whereas eq. (1) with  $T = |T_z|$  gives the energy of a low excited seniority two state [2].

justments [7], like in refs. [9,12,16–18]. We do it separately for each region, starting with region B.

The experimental data used in the adjustments in region B included 211 masses (ref. [19] augmented by data from the literature up to Spring 1973). Presently there are 267 known masses (ref. [20] (excluding values denoted “systematics” (#)) and recent literature). They include 56 new masses that were not used in the adjustments.

Fig. 1 shows the deviations from the data of the predictions of eq. (1) for the 56 newer masses, plotted as function of the distance from the line of  $\beta$ -stability,  $NFS = N - Z - \frac{0.4A^2}{A+200}$  [16]. Empty circles denote the deviations of the  $N = 126 - 128$  nuclei  $^{216}\text{Ac}$ ,  $^{218}\text{Pa}$ ,  $^{216}\text{Th}$ ,  $^{217}\text{Pa}$ ,  $^{219}\text{Pa}$ ,  $^{219}\text{U}$  and  $^{218}\text{U}$ , which increase in this order and indicate increasing underbinding of extrapolated  $N \approx 126$  nuclei when  $Z$  increases away from the data. This will be further considered in subsect. 4.2.

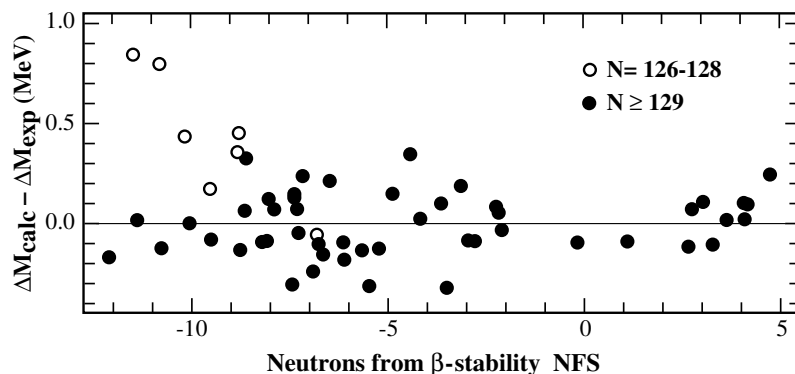


FIG. 1. Deviations of the predicted masses (eq. (1)) from the data for the 56 new masses in region B measured after the original adjustments were made. The deviations are plotted as function of the variable  $NFS = N - Z - 0.4A^2/(A + 200)$  [16]. Taken from ref. [9].

The deviations of the remaining 49 nuclei with  $N \geq 129$ , which do not follow the  $N = 126$  boundary but extend into the interior of the shell region, are marked by full circles. They are about equally positive and negative, have similar magnitudes, and do not seem to be correlated with NFS.

Table II, patterned after similar more elaborate ones [17,18], shows  $\delta_{av}$  and  $\delta_{rms}$ , the respective average and rms deviations of eq. (1) from the data, for  $\Delta M$ ,  $S_n$ ,  $S_p$ ,  $Q_{\beta^-}$  and  $Q_{\alpha}$ . The deviations are shown separately for the older data that were used in the 1973 adjustments and for the newer data. The last column shows the error ratios  $\delta_{rms}^{new} : \delta_{rms}^{old}$ .

TABLE II. Numbers of data  $N$ , average deviations  $\delta_{av}$ , and rms deviations  $\delta_{rms}$ , for eq. (1) with the coefficients of table I for region B. The numbers in brackets are obtained when nuclei with  $N = 126 - 128$  are excluded. The last column shows the ratios  $\delta_{rms}^{new} : \delta_{rms}^{old}$ . Taken from ref. [9].

Data	Original nuclei (1973)			New nuclei (1973-1999)			Error ratio
	N	$\delta_{av}$ (keV)	$\delta_{rms}$ (keV)	N	$\delta_{av}$ (keV)	$\delta_{rms}$ (keV)	
$\Delta M$	211	2	126	56 (49)	53 (-1)	236 (155)	1.87 (1.23)
$S_n$	169	1	117	45 (38)	12 (-2)	171 (145)	1.46 (1.24)
$S_p$	162	-4	121	52 (44)	-17 (15)	184 (148)	1.52 (1.22)
$Q_{\beta^-}$	146	-7	158	51 (44)	-19 (14)	209 (169)	1.32 (1.07)
$Q_{\alpha}$	174	-6	162	57 (55)	-3 (-8)	220 (220)	1.36 (1.36)

For the old data the magnitudes of  $\delta_{av}$  are single keVs, and those of  $\delta_{rms}$  are in the range 110–170 keV. For the new data they are larger, with respective highest values of 53 and 236 keV for  $\Delta M$  and smaller values for  $S_n$ ,  $S_p$ ,  $Q_{\beta^-}$  and  $Q_{\alpha}$ .

The table shows as well in brackets the corresponding deviations for the 49  $N \geq 129$  nuclei extending into the interior of the shell region, where SHE are presently searched for. Except for  $Q_{\alpha}$  they are smaller than the unbracketed deviations.

The deviations shown in table II are smaller than the corresponding ones for several current mass models. This is presumably mainly due to the inclusion in eq. (1) of the particle-hole(p-h)-symmetric configuration interaction terms  $E_{def}$  (eq. (8)) [9]. Configuration interaction is largely missing in macroscopic-microscopic Strutinsky type and in SC mean field calculations, where the included  $T = 1$ ,  $J = 0$  pairing correlations seem not to be enough. Based on the above analysis we have recently [9] proposed the use of the masses given in table B as a substitute for the SSME [1] in the interior of region B.

The situation in region A is less simple. The experimental data used in the 1973 adjustment included 29 masses and 62  $Q_{\alpha}$  values connecting unknown masses (ref. [19] augmented by data from the literature up to Spring 1973). Presently there are 150 known masses and 3  $Q_{\alpha}$  values connecting unknown masses (refs. [20] (excluding values denoted “systematics” (#)) and [21] and recent literature). There are 121 new masses that were not used in the adjustments.

Comparing the deviations of the predicted [7] 121 new masses to those of the 29 original ones, one observes [12] that the new deviations are as a rule considerably larger and almost all negative, with respective average and rms values of -807 and 1008 keV, as compared to -29 and 146 keV for the 29 original masses. For the 31 new  $Q_{\alpha}$  values, though, the deviations have perhaps even very slightly improved, becoming respectively 40 and 89 keV as compared to 5 and 103 keV before.

Closer scrutiny [12] shows that the worse fit to the new masses is mainly due to inadequate adjusted values of the coefficients  $\alpha$ ,  $\varepsilon$ ,  $\Theta$  and  $\kappa$ . These coefficients largely cancel in  $Q_{\alpha}$  and they were determined essentially by the 29 original masses nearer to  $\beta$ -stability, where the values of  $\alpha$ ,  $\Theta$  and  $\kappa$  are smaller (see ref. [22] for  $\Theta$ ) and that of  $\varepsilon$  is larger than for the 121 new nuclei nearer to the proton drip line. Consequently a new least-squares adjustment of eq. (1) to all the 150 presently known masses was made [12], with only four adjustable

parameters  $\alpha$ ,  $\varepsilon$ ,  $\Theta$  and  $\kappa$  while the other seven parameters were held fixed on their old adjusted values [7]. It was found that the new adjusted coefficients have shifted in the expected directions, and the resulting equation retains the high agreement with the data of the old  $Q_\alpha$  predictions, while at the same time the quality of its agreement with the mass data has been largely improved. The resulting set of coefficients for region A is the one given in table I.

Fig. 2 shows the deviations of the new predicted mass values for all the 150 known masses. For ease of comparison empty circles denote the deviations of the 29 originally adjusted masses and full circles mark the deviations of the 121 new ones. As already mentioned the deviations of the latter are considerably smaller than for the original predictions. The deviations of the 29 older data have worsened, though.

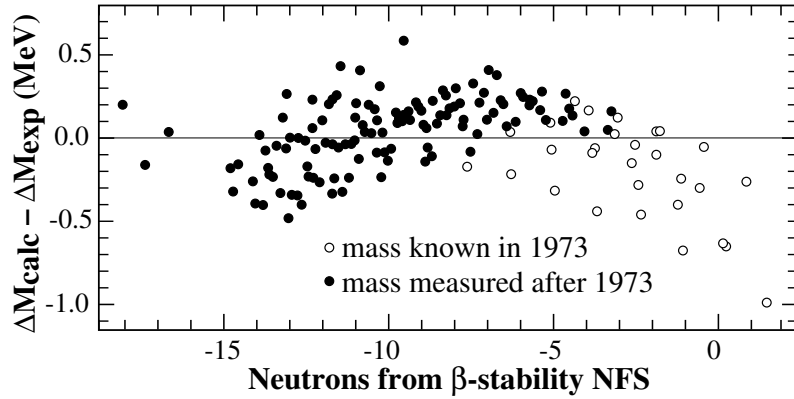


FIG. 2. Deviations of the mass predictions (eq. (1)) from the data for all the 150 presently known masses in region A. The deviations are plotted as function of the variable  $NFS = N - Z - 0.4A^2/(A+200)$  like in fig. 1. Taken from ref. [12].

Table III shows the resulting  $\delta_{av}$  and  $\delta_{rms}$  values of the predicted deviations. They are shown separately for the old 1973 data nearer to  $\beta$ -stability and for the new data extending into the interior of region A towards the proton drip line. For  $S_n$ ,  $S_p$  and  $Q_\alpha$  the new deviations, shown in the last two columns of the table, are similar to those of the original nuclei obtained in ref. [7]. For  $\Delta M$  and  $Q_{\beta-}$  the  $\delta_{rms}$  are respectively 1.5 and 1.1 times larger [12].

TABLE III. Numbers of data  $N$ , average deviations  $\delta_{av}$ , and rms deviations  $\delta_{rms}$ , for eq. (1) with the new values of the coefficients  $\alpha, \varepsilon, \Theta, \kappa$  and the old values of the other seven coefficients from Table I for region A. Taken from ref. [12].

Data	Original nuclei (1973)			New nuclei (1973-2000)		
	N	$\delta_{av}$ (keV)	$\delta_{rms}$ (keV)	N	$\delta_{av}$ (keV)	$\delta_{rms}$ (keV)
$\Delta M$	29	-193	344	121	48	216
$S_n$	18	158	416	120	-10	205
$S_p$	22	-144	202	104	18	184
$Q_{\beta-}$	15	-257	475	101	15	277
$Q_\alpha$	78	-5	104	31	18	85

Like in table II, the deviations shown in table III are smaller than the corresponding ones for several current mass models. Based on the above analysis we have recently [12] proposed the use of the masses given in table A as a substitute for the SSME [1] in the interior of region A, particularly for the extrapolatable-proven  $Q_\alpha$  values.

#### 4. Two Weak Points

##### 4.1. Over-smoothness inside shell regions

Inside a shell region eq. (1) describes a mass surface which is smoother than the empirical surface and is inadequate for describing fine structure effects [1,9].

This is illustrated in fig. 3 showing  $Q_\alpha$  systematics for the heaviest  $N \geq 140$  even-Z nuclei from Pu through Z = 110 [20]. Respective full and empty circles denote experimental values and values estimated from systematics. The small circles connected by thin lines show the predictions of eq. (1).

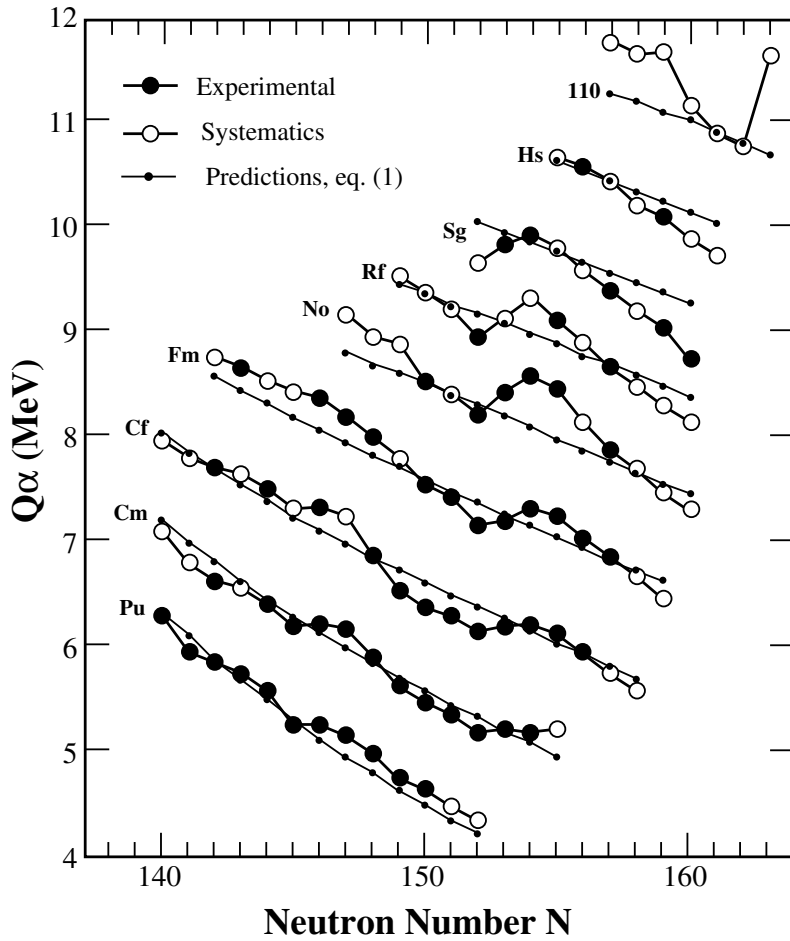


FIG. 3.  $Q_\alpha$  systematics of even-Z elements from Pu through Z = 110 for  $N \geq 140$ . Data taken from ref. [20] and predictions from refs. [7,9].

As a rule the experimental isotopic lines show similar negative trends when N increases, and they shift upwards rather uniformly when Z increases. This regular pattern breaks down for nuclei in the vicinity of the deformed doubly submagic nuclei  $(N_0, Z_0)$   $^{252}\text{Fm}$  ( $N_0 = 152$ ,  $Z_0 = 100$ ) and (presumably even more so)  $^{270}\text{Hs}$  ( $N_0 = 162$ ,  $Z_0 = 108$ ) [4,5,23], where the



trend of isotopic lines between  $N = N_0$  and  $N = N_0 + 2$  is positive, and the vertical distance between isotopic lines with  $Z = Z_0$  and  $Z = Z_0 + 2$  for  $N \approx N_0$  is larger than for other  $Z$  values.

None of these submagic number effects is shown by the predicted thin lines systematics.

Another illustration of over-smoothness of eq. (1) as compared to the data is seen in fig.

4. Additional examples are documented in ref. [1].

In the SSME non-smooth abrupt local changes associated with subshell and deformation effects are assumed to have been smoothed out by configuration interaction, eqs. (5) and (8), and the mass equation describes a smooth surface representing their average. The deviations from the average are mostly small, though, with an overall rms as given in table II.

#### 4.2. Discontinuities along shell region boundaries

Because the mass surface was adjusted in regions A and B separately it has different upwards curvings in the two regions, resulting in an unphysical discontinuity along the boundary line  $N = 126$ , which increases monotonically away from the data [7,9,24,25]. This discontinuity is as a rule a few hundreds keV for the experimentally known  $N = 126$  nuclides between Pb and U, and it reaches 1.3 MeV in  $^{227}\text{Md}$ , which is the heaviest  $N = 126$  isotone included in the tables.<sup>2</sup>

On the other hand, consistency with the shell model requires the occurrence of discontinuous drops of predicted nucleon separation energies when crossing a corresponding shell boundary towards heavier nuclei. In the present case the expected drops of two-neutron separation energies when crossing  $N = 126$  into region B are observed for all the elements included in the tables.

#### 5. Illustrative Applications

The mass tables are intended to be used as a predictive tool in the interiors of regions A and B. We briefly apply them to four recent SHE experiments [3,26–28].

In the first experiment [3] cold fusion of  $^{208}\text{Pb}$  target nuclei and 449 MeV bombarding  $^{86}\text{Kr}$  ions was studied. Three observed seven-members  $\alpha$ -decay chains are consistent with the formation of  $^{293}118$  and its sequential decay down to  $^{265}\text{Rf}$  ( $Z = 104$ ).

The compound nucleus (CN) formed in the reaction is  $^{294}118$ . According to the Pb and Kr masses [20] and the predicted mass of the CN from table B it is formed at an excitation energy ( $E^x$ ) of about 12 MeV, which allows it to emit one neutron, leaving the evaporation residue (EVR)  $^{293}118$  at  $E^x \leq 4$  MeV. Both isotopes might be considered possible parents of the  $\alpha$ -decaying chain.

For the assigned parent  $^{293}118$ , assuming that the decays proceed through or near the g.s., the respective average and rms deviations of the predicted  $Q_\alpha$  values from the observed ones are  $\delta_{av} = -197$  keV and  $\delta_{rms} = 308$  keV. The  $\delta_{rms}$  value is consistent with table II, but the  $\delta_{av}$  is too negative. The largest deviation of -735 keV for  $^{293}118$  might also be too negative.

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<sup>2</sup>In refs. [1] and [25] such unphysical discontinuities along shell region boundaries were avoided by adjusting to the data in the two regions simultaneously, with continuity requirements along the boundary imposed as additional constraints.

Fig. 4 shows the measured and predicted  $Q_\alpha$  values. One observes the over-smoothness mentioned in subsect. 4.1, and the large negative deviation of  $^{293}118$ . The authors of ref. [29] mention the possibility that the observed transitions may occur between structurally similar low lying  $[611]_{\frac{1}{2}}^+$  Nilsson levels which in some of the nuclei are not g.s. Using their calculated levels this would reduce the  $^{293}118$  deviation to -575 keV.

For the CN  $^{294}118$  considered as a parent the deviations are larger:  $\delta_{av} = -366$  keV,  $\delta_{rms} = 464$  keV and  $\delta(^{294}118) = -1011$  keV. This might perhaps lend some additional support to the authors' assignment of  $^{293}118$  as the parent. The authors of ref. [29] likewise obtained better agreement of their SC calculations with the  $^{293}118$  scenario.

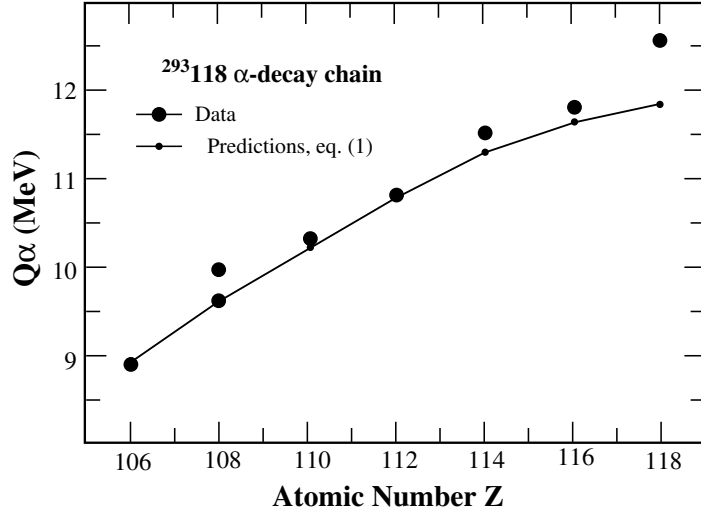


FIG. 4. Experimental [3] and predicted [7,9]  $Q_\alpha$  values of the  $^{293}118$  decay chain.

The relations of the results shown in fig. 4 to several current mass models are considered in ref. [9].

The CN and EVR parents, their corresponding formation channels, estimated<sup>3</sup> values of their excitation energies when formed, and the deviations  $\delta_{av}$  and  $\delta_{rms}$  from the data of the corresponding predicted  $Q_\alpha$  values assuming that the decays go through or near the g.s., are given in table IV.

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<sup>3</sup>The estimated values of  $E^x$  in tables IV - VII are obtained from the kinematics of the reactions assuming that the evaporated neutrons have zero kinetic energy and the evaporated charged particles (p and  $\alpha$ ) have a kinetic energy which is equal to their potential energy at the top of the Coulomb barrier. Higher kinetic energies of the evaporated particles would reduce the estimates given in the tables.

TABLE IV. Conceivable parents of the  $\alpha$ -decay chains [3] with their formation channels, deduced upper values (see footnote 3) of the excitation energies  $E^x$  of the radiative capture and the evaporated residue nuclei, and the deviations  $\delta_{av}$  and  $\delta_{rms}$  from the data of the corresponding predicted  $Q_\alpha$  values.

Parent	Channel	$E^x$ (MeV)	$\delta_{av}$ (MeV)	$\delta_{rms}$ (MeV)
$^{294}_{118}$	CN	12	-0.366	0.464
$^{293}_{118}$	1n	4	-0.197	0.308

The three other experiments were performed at higher excitation energies of the CN. In the second experiment [26] a  $^{244}\text{Pu}$  target was bombarded by 236 MeV  $^{48}\text{Ca}$  ions. An observed three-members  $\alpha$ -decay chain is considered a good candidate for originating from the parent  $^{289}_{114}$  and its sequential decay down to  $^{277}\text{Hs}$  ( $Z = 108$ ).

The CN formed in the reaction is  $^{292}_{114}$  at  $E^x \approx 27$  MeV (ref. [20] and table B). At this higher energy more channels for particle emission might be open than in the  $Z = 118$  cold fusion experiment, including up to 3n and also p or  $\alpha$  emission. Four conceivable EVR parents, their formation channels, estimated excitation energies at which they were formed, and the deviations  $\delta_{av}$  and  $\delta_{rms}$  from the data of the corresponding predicted  $Q_\alpha$  values assuming that the decays go through or near the g.s., are given in table V.

TABLE V. Conceivable EVR parents of the  $\alpha$ -decay chain [26] with their formation channels, their estimated values of  $E^x$ , and the deviations  $\delta_{av}$  and  $\delta_{rms}$  from the data of the corresponding predicted  $Q_\alpha$  values.

EVR parent	Evaporation channel	Estimated <sup>a</sup> $E^x$ (MeV)	$\delta_{av}$ (MeV)	$\delta_{rms}$ (MeV)
$^{290}_{114}$	2n	16	0.643	0.720
$^{289}_{114}$	3n	9	0.847	0.905
$^{291}_{113}$	p	8	-0.241	0.414
$^{288}_{112}$	$\alpha$	9	-0.181	0.363

<sup>a</sup> See footnote 3.

In the third experiment [27] a  $^{249}\text{Bk}$  target was bombarded by 117 MeV and 123 MeV  $^{22}\text{Ne}$  ions. We address the five observed two-members  $\alpha$ -decay chains which are assigned to the parent  $^{267}\text{Bh}$  ( $Z = 107$ ).

The CN formed in the reaction is  $^{271}\text{Bh}$  at respective  $E^x$  values of about 43 and 48 MeV (ref. [20] and table B), which is higher than in the  $Z = 114$  experiment, and presumably has more allowed evaporation channels. Table VI, arranged like table V, gives details for four conceivable EVR parents.<sup>4</sup>

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<sup>4</sup>Other EVRs, formed by  $\alpha 2n$  and  $\alpha 3n$  emissions, lead to results which seem to be in conflict with known decay characteristics of the nuclei involved.

TABLE VI. Conceivable EVR parents of the two-members  $\alpha$ -decay chains [27] with their formation channels, their estimated values of  $E^x$ , and the deviations  $\delta_{av}$  and  $\delta_{rms}$  from the data of the corresponding predicted  $Q_\alpha$  values.

EVR parent	Evaporation channel	Estimated <sup>a,b</sup> $E^x$ (MeV)	$\delta_{av}$ (MeV)	$\delta_{rms}$ (MeV)
<sup>267</sup> Bh	4n	18, 23	0.616	0.629
<sup>266</sup> Bh	5n	11, 16	0.712	0.723
<sup>268</sup> Sg	p2n	14, 19	-0.035	0.134
<sup>267</sup> Sg	p3n	7, 12	0.066	0.146

<sup>a</sup> See footnote 3.

<sup>b</sup> The two estimated values correspond to the two bombarding energies.

The first two lines in tables V and VI correspond to xn emissions including the EVR parents assigned by the authors. Their deviations considerably exceed the values expected from table II for g.s. transitions. If the above assignments are confirmed, the large deviations might indicate that the decay chains do not proceed through levels in the vicinity of the g.s.

The two subsequent lines in the tables correspond to conceivable EVR parents formed by p,  $\alpha$  and pxn emissions. Their deviations are smaller, with  $\delta_{rms}$  values consistent with table II. This might lend some support to scenarios with pxn and  $\alpha$ xn emissions, in addition to the pure xn evaporations commonly considered.

Finally, in the fourth experiment [28] a <sup>248</sup>Cm target was bombarded by 240 MeV <sup>48</sup>Ca ions. An observed three-members  $\alpha$ -decay chain is assigned to the nuclide <sup>292</sup>116 and its sequential decay down to <sup>280</sup>110.

The CN formed in the reaction is <sup>296</sup>116 at  $E^x \approx 27$  MeV (ref. [20] and table B). Table VII gives details for four conceivable EVR parents in addition to the assigned parent <sup>292</sup>116.

TABLE VII. Conceivable EVR parents of the  $\alpha$ -decay chain [28] with their formation channels, their estimated values of  $E^x$ , and the deviations  $\delta_{av}$  and  $\delta_{rms}$  from the data of the corresponding predicted  $Q_\alpha$  values.

EVR parent	Evaporation channel	Estimated <sup>a</sup> $E^x$ (MeV)	$\delta_{av}$ (MeV)	$\delta_{rms}$ (MeV)
<sup>294</sup> 116	2n	14	0.177	0.466
<sup>293</sup> 116	3n	7	0.423	0.577
<sup>292</sup> 116	4n	2	0.669	0.758
<sup>295</sup> 115	p	7	-0.767	0.905
<sup>292</sup> 114	$\alpha$	8	-0.590	0.699

<sup>a</sup> See footnote 3.

The smallest deviations in increasing order occur for the respective EVR parents <sup>294</sup>116 and <sup>293</sup>116 formed by 2n and 3n emissions. Their  $\delta_{rms}$  values are consistent with table II. This might lend some support to a 2n (and possibly also 3n) scenario as compared to the 4n, p and  $\alpha$  evaporation channels.

The last two members of the  $\alpha$ -decay chain seen in this experiment agree with the two-members  $\alpha$ -decay chains observed before in a  $Z = 114$  experiment [28,30]. If they are the same, a formation of the present  $Z = 116$  parent by  $2n$  (or  $3n$ ) emission would imply the same formation channel(s) for the  $Z = 114$  EVR parent in ref. [30], rather than the assigned  $4n$  channel.

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## EXPLANATION OF TABLES

Z	Proton number.
N	Neutron number.
A	Mass number: $N + Z$ .
$\Delta M(N,Z)$	Atomic mass excess: $E(N,Z) + 8071.323N + 7288.969Z$ keV, where $E(N,Z)$ is the adjusted g.s. energy, eq. (1).
$S_n(N,Z)$	Neutron separation energy: $\Delta M(N-1,Z) - \Delta M(N,Z) + 8071.323$ keV.
$S_p(N,Z)$	Proton separation energy: $\Delta M(N,Z-1) - \Delta M(N,Z) + 7288.969$ keV.
$Q_\alpha(N,Z)$	Q-alpha value: $\Delta M(N,Z) - \Delta M(N-2,Z-2) - 2424.911$ keV.
$Q_\beta(N,Z)$	Q-beta value: $\Delta M(N,Z) - \Delta M(N-1,Z+1)$ .
$S_{2n}(N,Z)$	Two-neutron separation energy: $\Delta M(N-2,Z) - \Delta M(N,Z) + 16142.646$ keV.
$S_{2p}(N,Z)$	Two-proton separation energy: $\Delta M(N,Z-2) - \Delta M(N,Z) + 14577.938$ keV.

TABLE A. Atomic mass excesses and mass differences in keV for nuclei in the shell region  $82 \leq N, Z \leq 126$ , calculated from eq. (1) with the coefficients of region A in table I.

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
82	94	176	10857	12871			-15377	23676	
82	95	177	8541	10387			-12831	23259	
82	96	178	4177	12435			-14360	22822	
82	97	179	2263	9985			-11857	22420	
82	98	180	-1682	12017			-13385	22002	
82	99	181	-3215	9603			-10927	21621	
82	100	182	-6767	11624			-12457	21227	
82	101	183	-7944	9247			-10045	20871	
82	102	184	-11130	11257			-11577	20505	
82	103	185	-11979	8919			-9212	20177	
82	104	186	-14827	10920			-10748	19839	
82	105	187	-15376	8619			-8429	19539	
82	106	188	-17916	10611			-9969	19231	
82	107	189	-18192	8347			-7694	18958	
82	108	190	-20450	10329			-9237	18676	
82	109	191	-20479	8100			-7005	18429	
82	110	192	-22480	10071			-8550	18172	
82	111	193	-22283	7875			-6358	17946	
82	112	194	-24046	9834			-7903	17709	
82	113	195	-23641	7666			-5747	17500	
82	114	196	-25180	9610			-7289	17276	
82	115	197	-24578	7468			-5167	17078	
82	116	198	-25901	9394			-6702	16862	
82	117	199	-25103	7273			-4609	16668	
82	118	200	-26210	9178			-6134	16452	
82	119	201	-25213	7074			-4064	16252	
82	120	202	-26095	8953			-5574	16027	
82	121	203	-24884	6860			-3522	15813	
82	122	204	-25522	8708			-5013	15569	
82	123	205	-24073	6622			-2974	15331	
82	124	206	-24437	8435			-4439	15057	
82	125	207	-22714	6348			-2406	14783	
82	126	208	-22764	8120			-3840	14469	
83	95	178	18538	10906	-2707		-11438	23839	
83	96	179	14121	12487	-2655		-12965	23393	
83	97	180	11703	10489	-2150		-10482	22977	
83	98	181	7712	12061	-2106		-12008	22551	
83	99	182	5689	10094	-1615		-9569	22156	
83	100	183	2101	11659	-1580		-11095	21754	
83	101	184	447	9725	-1102		-8701	21385	



Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
83	102	185	-2766	11285	-1075		-10230	21010	
83	103	186	-4079	9383	-610		-7882	20668	
83	104	187	-6947	10939	-591		-9414	20323	
83	105	188	-7947	9071	-140		-7111	20010	
83	106	189	-10498	10622	-129		-8647	19693	
83	107	190	-11212	8786	309		-6388	19408	
83	108	191	-13474	10332	312		-7927	19118	
83	109	192	-13929	8526	738		-5709	18859	
83	110	193	-15925	10067	734		-7249	18593	
83	111	194	-16143	8288	1148		-5071	18356	
83	112	195	-17894	9821	1136		-6611	18110	
83	113	196	-17891	8068	1538		-4469	17890	
83	114	197	-19410	9590	1518		-6005	17659	
83	115	198	-19198	7858	1909		-3895	17449	
83	116	199	-20494	9367	1882		-5425	17226	
83	117	200	-20076	7652	2261		-3343	17020	
83	118	201	-21149	9144	2227		-4863	16797	
83	119	202	-20520	7442	2595		-2804	16586	
83	120	203	-21361	8912	2555		-4308	16355	
83	121	204	-20508	7218	2912		-2268	16130	
83	122	205	-21099	8662	2865		-3752	15880	
83	123	206	-19997	6969	3213		-1723	15631	
83	124	207	-20308	8382	3160		-3182	15351	
83	125	208	-18923	6686	3497		-1158	15068	
83	126	209	-18913	8061	3438		-2586	14747	
84	96	180	22186	12972	-775	8903	-15599	23933	-3430
84	97	181	19721	10536	-728	8754	-13114	23509	-2879
84	98	182	15258	12533	-256	8656	-14615	23070	-2363
84	99	183	13196	10133	-218	8508	-12173	22667	-1833
84	100	184	9148	12119	241	8406	-13675	22252	-1338
84	101	185	7464	9756	272	8254	-11278	21875	-830
84	102	186	3803	11732	719	8146	-12782	21488	-356
84	103	187	2467	9406	742	7986	-10430	21139	131
84	104	188	-835	11374	1177	7870	-11939	20781	585
84	105	189	-1850	9086	1192	7703	-9631	20460	1052
84	106	190	-4824	11045	1615	7578	-11143	20132	1486
84	107	191	-5547	8793	1623	7403	-8879	19839	1932
84	108	192	-8220	10744	2034	7271	-10394	19538	2347
84	109	193	-8675	8527	2035	7091	-8172	19271	2774
84	110	194	-11071	10467	2435	6953	-9688	18994	3169
84	111	195	-11282	8282	2428	6771	-7505	18749	3576
84	112	196	-13421	10210	2816	6633	-9020	18492	3953
84	113	197	-13405	8054	2802	6453	-6873	18265	4341

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
84	114	198	-15302	9968	3180	6319	-8385	18023	4699
84	115	199	-15069	7837	3159	6147	-6270	17806	5069
84	116	200	-16732	9734	3526	6023	-7776	17572	5409
84	117	201	-16286	7625	3498	5866	-5688	17359	5760
84	118	202	-17715	9501	3855	5760	-7184	17126	6083
84	119	203	-17052	7408	3821	5625	-5119	16909	6417
84	120	204	-18240	9258	4167	5545	-6600	16667	6722
84	121	205	-17346	7177	4127	5441	-4553	16436	7039
84	122	206	-18274	8998	4463	5396	-6014	16176	7329
84	123	207	-17126	6923	4417	5333	-3978	15921	7630
84	124	208	-17764	8709	4744	5332	-5414	15632	7904
84	125	209	-16327	6634	4692	5321	-3384	15343	8190
84	126	210	-16636	8380	5011	5376	-4788	15014	8450
85	97	182	29873	11032	-2863	8910	-11777	24054	-3592
85	98	183	25370	12575	-2822	8823	-13275	23607	-3079
85	99	184	22824	10617	-2338	8695	-10852	23192	-2556
85	100	185	18742	12153	-2304	8604	-12351	22770	-2063
85	101	186	16586	10227	-1833	8471	-9972	22380	-1561
85	102	187	12898	11758	-1806	8372	-11474	21986	-1087
85	103	188	11103	9866	-1347	8231	-9139	21625	-604
85	104	189	7781	11393	-1327	8122	-10644	21259	-150
85	105	190	6318	9533	-880	7973	-8353	20927	312
85	106	191	3332	11057	-868	7854	-9860	20591	747
85	107	192	2174	9229	-432	7696	-7612	20287	1190
85	108	193	-503	10749	-427	7569	-9122	19978	1607
85	109	194	-1383	8951	-3	7404	-6915	19700	2031
85	110	195	-3777	10465	-5	7271	-8426	19416	2429
85	111	196	-4401	8694	407	7103	-6257	19160	2835
85	112	197	-6531	10201	398	6968	-7768	18896	3215
85	113	198	-6916	8456	800	6801	-5634	18658	3603
85	114	199	-8798	9953	785	6670	-7141	18409	3965
85	115	200	-8956	8228	1175	6510	-5039	18181	4335
85	116	201	-10597	9712	1154	6388	-6539	17941	4680
85	117	202	-10531	8005	1534	6241	-4463	17718	5033
85	118	203	-11933	9472	1506	6136	-5953	17478	5361
85	119	204	-11640	7778	1876	6011	-3900	17251	5697
85	120	205	-12793	9224	1842	5930	-5375	17002	6009
85	121	206	-12260	7537	2202	5835	-3339	16762	6329
85	122	207	-13147	8958	2162	5789	-4793	16496	6626
85	123	208	-12350	7273	2512	5733	-2768	16232	6930
85	124	209	-12942	8664	2467	5731	-4198	15938	7212
85	125	210	-11847	6975	2808	5725	-2178	15639	7501
85	126	211	-12105	8329	2758	5777	-3576	15305	7769

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
86	98	184	33676	13040	-1017	9065	-15873	24116	-3840
86	99	185	31094	10654	-981	8948	-13448	23694	-3319
86	100	186	26558	12606	-527	8875	-14923	23260	-2832
86	101	187	24372	10257	-497	8751	-12541	22863	-2330
86	102	188	20243	12200	-55	8669	-14019	22458	-1861
86	103	189	18425	9889	-32	8536	-11681	22090	-1379
86	104	190	14671	11824	398	8443	-13162	21713	-929
86	105	191	13193	9549	414	8300	-10867	21374	-465
86	106	192	9786	11477	834	8197	-12352	21027	-33
86	107	193	8619	9239	844	8044	-10099	20716	411
86	108	194	5531	11158	1253	7931	-11586	20397	825
86	109	195	4649	8953	1256	7771	-9374	20112	1252
86	110	196	1856	10864	1654	7651	-10862	19818	1649
86	111	197	1236	8691	1651	7487	-8689	19555	2058
86	112	198	-1282	10590	2039	7364	-10176	19281	2438
86	113	199	-1657	8446	2029	7200	-8037	19036	2829
86	114	200	-3917	10331	2407	7080	-9521	18777	3192
86	115	201	-4058	8212	2391	6922	-7413	18543	3567
86	116	202	-6067	10080	2759	6809	-8890	18293	3913
86	117	203	-5979	7983	2736	6664	-6809	18064	4271
86	118	204	-7739	9831	3095	6567	-8276	17814	4601
86	119	205	-7418	7750	3067	6442	-6217	17581	4943
86	120	206	-8920	9573	3416	6370	-7669	17323	5258
86	121	207	-8353	7504	3382	6274	-5627	17077	5584
86	122	208	-9581	9298	3722	6234	-7058	16802	5884
86	123	209	-8744	7234	3683	6177	-5027	16533	6196
86	124	210	-9668	8995	4014	6180	-6434	16230	6482
86	125	211	-8529	6931	3970	6172	-4408	15927	6779
86	126	212	-9110	8652	4293	6228	-5784	15584	7052
87	100	187	36914	12639	-3066	9119	-13630	23770	-3594
87	101	188	34262	10723	-2600	9013	-11266	23362	-3098
87	102	189	30106	12227	-2574	8939	-12741	22950	-2630
87	103	190	27834	10343	-2119	8823	-10420	22570	-2152
87	104	191	24061	11844	-2100	8737	-11897	22188	-1701
87	105	192	22138	9993	-1656	8610	-9619	21838	-1242
87	106	193	18718	11491	-1643	8512	-11100	21484	-808
87	107	194	17118	9671	-1210	8374	-8863	21162	-366
87	108	195	14024	11165	-1203	8266	-10346	20837	50
87	109	196	12719	9376	-781	8120	-8149	20541	475
87	110	197	9925	10865	-780	8004	-9633	20241	874
87	111	198	8893	9102	-368	7852	-7473	19968	1282
87	112	199	6380	10585	-373	7732	-8955	19688	1665
87	113	200	5604	8847	27	7580	-6830	19432	2057

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
87	114	201	3355	10320	16	7462	-8309	19167	2424
87	115	202	2822	8603	408	7314	-6214	18924	2799
87	116	203	829	10064	391	7203	-7685	18667	3150
87	117	204	536	8364	772	7067	-5617	18428	3509
87	118	205	-1201	9808	750	6971	-7078	18173	3845
87	119	206	-1251	8122	1122	6854	-5031	17931	4189
87	120	207	-2726	9546	1094	6781	-6477	17668	4510
87	121	208	-2522	7866	1457	6693	-4446	17412	4840
87	122	209	-3716	9265	1424	6652	-5872	17132	5147
87	123	210	-3234	7588	1778	6601	-3851	16854	5461
87	124	211	-4120	8957	1740	6601	-5252	16546	5755
87	125	212	-3326	7277	2086	6598	-3236	16234	6057
87	126	213	-3865	8610	2043	6652	-4606	15887	6337
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88	102	190	38254	12664	-858	9270	-15272	23416	-3433
88	103	191	35959	10366	-835	9161	-12948	23031	-2955
88	104	192	31758	12271	-408	9090	-14403	22638	-2508
88	105	193	29819	10010	-391	8968	-12122	22282	-2047
88	106	194	25982	11908	25	8885	-13579	21919	-1617
88	107	195	24370	9682	37	8752	-11339	21591	-1173
88	108	196	20868	11573	444	8656	-12799	21255	-758
88	109	197	19558	9381	449	8514	-10598	20954	-331
88	110	198	16367	11262	847	8410	-12059	20644	67
88	111	199	15336	9102	846	8261	-9895	20365	478
88	112	200	12434	10973	1234	8152	-11355	20075	861
88	113	201	11664	8841	1228	8002	-9225	19814	1256
88	114	202	9036	10698	1607	7894	-10681	19540	1624
88	115	203	8515	8592	1595	7747	-8581	19291	2003
88	116	204	6153	10433	1965	7645	-10031	19025	2356
88	117	205	5877	8347	1948	7510	-7957	18781	2720
88	118	206	3779	10169	2308	7422	-9395	18517	3059
88	119	207	3750	8099	2286	7305	-7343	18269	3408
88	120	208	1924	9897	2638	7238	-8767	17997	3732
88	121	209	2155	7839	2611	7149	-6730	17737	4068
88	122	210	617	9609	2954	7113	-8134	17448	4379
88	123	211	1132	7557	2922	7060	-6108	17166	4701
88	124	212	-89	9293	3258	7066	-7487	16850	4998
88	125	213	740	7240	3221	7060	-5465	16534	5308
88	126	214	-126	8938	3549	7117	-6813	16179	5593
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89	104	193	41941	12292	-2893	9409	-13162	23109	-3302
89	105	194	39561	10450	-2453	9302	-10897	22742	-2845
89	106	195	35710	11923	-2439	9224	-12352	22373	-2413
89	107	196	33668	10112	-2008	9104	-10127	22036	-1971

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
89	108	197	30157	11582	-1999	9013	-11583	21695	-1555
89	109	198	28426	9801	-1579	8883	-9397	21384	-1129
89	110	199	25231	11266	-1575	8782	-10854	21068	-728
89	111	200	23789	9513	-1164	8645	-8704	20779	-317
89	112	201	20889	10971	-1166	8539	-10160	20484	68
89	113	202	19718	9242	-765	8399	-8043	20214	463
89	114	203	17097	10692	-771	8292	-9495	19934	835
89	115	204	16184	8983	-379	8155	-7407	19676	1215
89	116	205	13834	10421	-391	8054	-8852	19405	1573
89	117	206	13175	8730	-8	7927	-6790	19152	1939
89	118	207	11093	10152	-25	7839	-8224	18883	2283
89	119	208	10691	8474	348	7729	-6183	18626	2634
89	120	209	8886	9876	326	7662	-7601	18350	2965
89	121	210	8752	8205	692	7579	-5576	18081	3303
89	122	211	7240	9583	666	7542	-6974	17788	3621
89	123	212	7397	7914	1023	7494	-4959	17497	3946
89	124	213	6205	9262	993	7497	-6332	17177	4251
89	125	214	6686	7590	1343	7495	-4320	16853	4565
89	126	215	5853	8904	1308	7549	-5662	16494	4858
90	106	196	43795	12337	-796	9612	-14814	22806	-3235
90	107	197	41741	10125	-783	9497	-12586	22463	-2792
90	108	198	37824	11987	-378	9417	-14021	22113	-2377
90	109	199	36086	9809	-370	9290	-11831	21797	-1949
90	110	200	32494	11663	26	9200	-13266	21472	-1549
90	111	201	31049	9515	29	9066	-11112	21179	-1135
90	112	202	27761	11359	416	8969	-12546	20875	-749
90	113	203	26592	9240	414	8831	-10424	20599	-350
90	114	204	23592	11071	793	8733	-11854	20311	22
90	115	205	22686	8977	786	8597	-9763	20048	406
90	116	206	19965	10792	1157	8504	-11185	19769	765
90	117	207	19318	8718	1145	8377	-9119	19511	1137
90	118	208	16874	10515	1508	8295	-10531	19233	1482
90	119	209	16487	8457	1492	8185	-8485	18972	1840
90	120	210	14328	10230	1846	8124	-9882	18688	2173
90	121	211	14215	8184	1826	8039	-7851	18415	2518
90	122	212	12356	9929	2172	8007	-9228	18114	2839
90	123	213	12538	7889	2148	7957	-7207	17819	3171
90	124	214	11007	9602	2487	7964	-8559	17492	3481
90	125	215	11516	7561	2458	7959	-6542	17164	3802
90	126	216	10351	9236	2791	8016	-7863	16798	4100
91	108	199	47917	11999	-2803	9782	-12823	22552	-3182
91	109	200	45760	10228	-2385	9667	-10648	22227	-2755

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
91	110	201	42162	11669	-2378	9579	-12080	21897	-2352
91	111	202	40307	9925	-1968	9455	-9940	21595	-1939
91	112	203	37017	11361	-1966	9360	-11369	21287	-1549
91	113	204	35447	9641	-1565	9232	-9262	21002	-1151
91	114	205	32449	11068	-1568	9135	-10687	20710	-774
91	115	206	31151	9369	-1175	9008	-8609	20438	-388
91	116	207	28437	10785	-1182	8915	-10027	20155	-25
91	117	208	27405	9103	-798	8796	-7972	19888	347
91	118	209	24973	10503	-809	8713	-9380	19606	698
91	119	210	24210	8833	-433	8610	-7345	19337	1058
91	120	211	22066	10215	-449	8547	-8737	19049	1397
91	121	212	21585	8552	-80	8469	-6718	18768	1745
91	122	213	19745	9910	-100	8434	-8090	18463	2072
91	123	214	19566	8250	260	8389	-6079	18161	2408
91	124	215	18058	9579	237	8393	-7426	17829	2725
91	125	216	18214	7915	591	8392	-5419	17494	3050
91	126	217	17075	9210	564	8444	-6735	17125	3356
92	110	202	50247	12065	-796	9998	-14472	22303	-3175
92	111	203	48387	9931	-790	9876	-12328	21997	-2759
92	112	204	44709	11749	-403	9790	-13737	21680	-2370
92	113	205	43137	9643	-401	9663	-11625	21392	-1967
92	114	206	39760	11448	-21	9574	-13030	21091	-1590
92	115	207	38464	9367	-24	9447	-10947	20815	-1200
92	116	208	35378	11157	347	9361	-12344	20524	-834
92	117	209	34353	9096	341	9241	-10285	20253	-457
92	118	210	31556	10868	705	9165	-11672	19964	-104
92	119	211	30804	8823	695	9061	-9633	19691	261
92	120	212	28303	10572	1052	9004	-11004	19395	603
92	121	213	27835	8538	1038	8923	-8979	19111	957
92	122	214	25646	10260	1388	8893	-10330	18799	1287
92	123	215	25485	8232	1370	8845	-8315	18493	1630
92	124	216	23633	9922	1713	8852	-9641	18155	1951
92	125	217	23810	7894	1692	8847	-7629	17817	2283
92	126	218	22334	9547	2029	8902	-8924	17441	2594
93	112	205	54763	11754	-2764	10176	-12575	22095	-3168
93	113	206	52791	10043	-2364	10058	-10477	21798	-2765
93	114	207	49412	11450	-2362	9969	-11878	21494	-2384
93	115	208	47723	9760	-1969	9850	-9808	21210	-1993
93	116	209	44639	11155	-1971	9764	-11201	20915	-1623
93	117	210	43228	9481	-1586	9652	-9154	20637	-1245
93	118	211	40437	10862	-1592	9575	-10536	20344	-886
93	119	212	39307	9201	-1214	9476	-8509	20063	-518

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
93	120	213	36815	10563	-1223	9417	-9875	19764	-171
93	121	214	35977	8909	-852	9341	-7862	19472	185
93	122	215	33800	10247	-865	9309	-9209	19157	522
93	123	216	33275	8596	-501	9265	-7204	18844	869
93	124	217	31440	9906	-517	9269	-8525	18503	1196
93	125	218	31259	8251	-159	9268	-6523	18158	1532
93	126	219	29802	9528	-178	9318	-7814	17780	1851
94	114	208	57531	11830	-830	10396	-14199	21879	-3192
94	115	209	55840	9762	-828	10277	-12125	21592	-2797
94	116	210	52383	11528	-455	10197	-13498	21290	-2426
94	117	211	50974	9480	-456	10084	-11447	21008	-2042
94	118	212	47816	11228	-90	10013	-12809	20709	-1682
94	119	213	46691	9196	-95	9913	-10778	20425	-1309
94	120	214	43840	10922	264	9858	-12124	20119	-958
94	121	215	43010	8901	256	9780	-10106	19824	-596
94	122	216	40480	10601	609	9751	-11433	19502	-255
94	123	217	39965	8585	598	9705	-9424	19186	97
94	124	218	37783	10253	945	9712	-10725	18839	428
94	125	219	37616	8238	931	9706	-8718	18492	772
94	126	220	35818	9869	1273	9759	-9988	18107	1094
95	116	211	62422	11530	-2749	10585	-12366	21686	-3204
95	117	212	60626	9866	-2363	10478	-10328	21397	-2819
95	118	213	57469	11228	-2363	10405	-11685	21094	-2454
95	119	214	55964	9576	-1984	10311	-9666	20804	-2079
95	120	215	53116	10919	-1987	10254	-11008	20495	-1723
95	121	216	51913	9274	-1614	10180	-9002	20193	-1357
95	122	217	49389	10594	-1620	10149	-10324	19869	-1011
95	123	218	48508	8952	-1253	10106	-8325	19547	-655
95	124	219	46335	10244	-1262	10109	-9622	19197	-316
95	125	220	45807	8599	-901	10106	-7626	18844	30
95	126	221	44020	9858	-912	10155	-8891	18457	360
96	118	214	65630	11596	-872	10822	-13936	21466	-3236
96	119	215	64125	9576	-871	10726	-11913	21173	-2855
96	120	216	60915	11281	-509	10673	-13236	20858	-2497
96	121	217	59714	9272	-511	10597	-11225	20553	-2126
96	122	218	56834	10950	-155	10569	-12528	20223	-1776
96	123	219	55957	8948	-159	10522	-10525	19899	-1413
96	124	220	53433	10595	190	10528	-11803	19543	-1072
96	125	221	52912	8592	184	10521	-9802	19187	-717
96	126	222	50779	10203	529	10571	-11049	18796	-383

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
97	120	217	70939	11282	-2735	11045	-12129	21241	-3244
97	121	218	69362	9648	-2359	10973	-10130	20931	-2871
97	122	219	66483	10950	-2359	10941	-11428	20599	-2515
97	123	220	65236	9318	-1990	10898	-9437	20268	-2150
97	124	221	62714	10593	-1992	10899	-10710	19911	-1801
97	125	222	61828	8957	-1627	10895	-8720	19550	-1443
97	126	223	59700	10199	-1631	10940	-9962	19156	-1102
98	122	220	74673	11309	-901	11333	-13611	20961	-3261
98	123	221	73425	9319	-899	11286	-11615	20629	-2889
98	124	222	70549	10947	-545	11289	-12870	20267	-2537
98	125	223	69663	8957	-545	11280	-10876	19904	-2173
98	126	224	67185	10548	-196	11327	-12099	19506	-1828
99	124	223	80539	10951	-2701	11631	-11785	20643	-3246
99	125	224	79285	9325	-2333	11624	-9801	20276	-2878
99	126	225	76805	10551	-2330	11665	-11021	19876	-2526
100	126	226	84993	10904	-899	12019	-13137	20236	-3229

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TABLE B. Atomic mass excesses and mass differences in keV for nuclei in the shell region  $126 \leq N \leq 184$ ,  $82 \leq Z \leq 126$ , calculated from eq. (1) with the coefficients of region B in table I.

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
82	126	208	-21909						
82	127	209	-17669	3831			596		
82	128	210	-14954	5355			-428	9187	
82	129	211	-10522	3640			1379	8995	
82	130	212	-7602	5151			402	8791	
82	131	213	-2985	3453			2223	8605	
82	132	214	132	4952			1280	8406	
82	133	215	4931	3272			3102	8225	
82	134	216	8242	4759			2180	8032	
82	135	217	13217	3096			3993	7856	
82	136	218	16717	4571			3084	7668	
82	137	219	21862	2925			4881	7497	
82	138	220	25545	4388			3977	7314	
82	139	221	30857	2759			5752	7147	
82	140	222	34719	4209			4848	6969	
82	141	223	40193	2597			6597	6807	
82	142	224	44228	4036			5690	6633	
82	143	225	49860	2439			7411	6475	
82	144	226	54064	3867			6497	6306	
82	145	227	59850	2285			8188	6152	
82	146	228	64220	3702			7267	5987	
82	147	229	70155	2135			8926	5837	
82	148	230	74685	3541			7996	5677	
82	149	231	80767	1989			9623	5531	
82	150	232	85453	3384			8684	5374	
82	151	233	91677	1847			10280	5232	
82	152	234	96516	3231			9331	5079	
82	153	235	102878	1709			10896	4941	
82	154	236	107867	3082			9937	4792	
82	155	237	114364	1574			11472	4656	
82	156	238	119498	2937			10504	4511	
82	157	239	126127	1442			12008	4379	
82	158	240	131403	2795			11032	4237	
82	159	241	138160	1314			12507	4109	
82	160	242	143574	2656			11522	3970	
82	161	243	150457	1189			12969	3845	
82	162	244	156006	2521			11976	3710	
82	163	245	163011	1066			13396	3588	
82	164	246	168693	2389			12397	3456	
82	165	247	175817	947			13791	3337	
82	166	248	181627	2260			12785	3207	

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
82	167	249	188867	831			14155	3091	
82	168	250	194804	2134			13146	2965	
82	169	251	202158	717			14493	2852	
82	170	252	208218	2011			13481	2728	
82	171	253	215683	606			14808	2617	
82	172	254	221863	1891			13797	2497	
82	173	255	229436	498			15107	2389	
82	174	256	235733	1773			14099	2271	
82	175	257	243412	392			15396	2166	
82	176	258	249825	1658			14395	2051	
82	177	259	257607	289			15685	1947	
82	178	260	264132	1546			14696	1835	
82	179	261	272015	187			15983	1734	
82	180	262	278650	1436			15013	1624	
82	181	263	286632	89			16306	1526	
82	182	264	293374	1329			15363	1418	
82	183	265	301453	-7			16670	1321	
82	184	266	308300	1223			15763	1216	
83	126	209	-18266		3646				
83	127	210	-14525	4330	4145		1685		
83	128	211	-11902	5447	4236		650	9778	
83	129	212	-8005	4174	4771		2435	9622	
83	130	213	-5209	5275	4895		1450	9449	
83	131	214	-1147	4009	5450		3251	9284	
83	132	215	1828	5095	5592		2302	9104	
83	133	216	6062	3837	6157		4106	8932	
83	134	217	9223	4910	6308		3179	8748	
83	135	218	13632	3661	6873		4976	8572	
83	136	219	16981	4722	7024		4063	8384	
83	137	220	21568	3484	7583		5844	8207	
83	138	221	25105	4534	7729		4937	8018	
83	139	222	29870	3305	8276		6698	7840	
83	140	223	33595	4346	8412		5792	7652	
83	141	224	38538	3128	8944		7527	7475	
83	142	225	42449	4160	9068		6617	7288	
83	143	226	47567	2953	9582		8325	7113	
83	144	227	51662	3975	9691		7410	6929	
83	145	228	56953	2780	10186		9087	6756	
83	146	229	61229	3795	10279		8164	6575	
83	147	230	66689	2611	10755		9811	6406	
83	148	231	71143	3617	10831		8880	6228	
83	149	232	76769	2445	11286		10496	6062	
83	150	233	81396	3444	11346		9555	5889	

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
83	151	234	87185	2282	11780		11140	5726	
83	152	235	91982	3274	11823		10191	5556	
83	153	236	97929	2124	12238		11745	5398	
83	154	237	102892	3108	12264		10786	5232	
83	155	238	108994	1969	12659		12311	5078	
83	156	239	114118	2947	12669		11344	4916	
83	157	240	120370	1818	13045		12839	4765	
83	158	241	125652	2789	13039		11863	4608	
83	159	242	132052	1671	13396		13330	4461	
83	160	243	137487	2636	13376		12347	4307	
83	161	244	144030	1528	13715		13787	4164	
83	162	245	149614	2486	13680		12798	4015	
83	163	246	156296	1390	14004		14211	3876	
83	164	247	162026	2341	13956		13215	3731	
83	165	248	168842	1255	14264		14604	3596	
83	166	249	174712	2200	14204		13604	3456	
83	167	250	181658	1125	14498		14969	3326	
83	168	251	187665	2064	14428		13965	3190	
83	169	252	194736	999	14710		15308	3064	
83	170	253	200874	1933	14633		14302	2933	
83	171	254	208065	879	14906		15626	2813	
83	172	255	214328	1808	14823		14621	2688	
83	173	256	221634	765	15090		15928	2573	
83	174	257	228015	1689	15006		14925	2455	
83	175	258	235429	657	15272		16219	2347	
83	176	259	241922	1578	15191		15223	2236	
83	177	260	249435	557	15460		16508	2136	
83	178	261	256032	1475	15389		15522	2032	
83	179	262	263636	466	15668		16803	1942	
83	180	263	270325	1381	15613		15833	1848	
83	181	264	278011	385	15909		17116	1767	
83	182	265	284783	1299	15880		16170	1685	
83	183	266	292537	316	16204		17463	1616	
83	184	267	299378	1230	16211		16548	1547	
84	126	210	-16211		5234				8879
84	127	211	-12552	4412	5315		-803		9460
84	128	212	-10440	5959	5827	9043	-1833	10371	10064
84	129	213	-6659	4290	5943	8585	-55	10250	10714
84	130	214	-4399	5810	6478	8130	-1032	10101	11374
84	131	215	-473	4145	6615	7624	764	9956	12065
84	132	216	1956	5641	7161	7134	-176	9787	12754
84	133	217	6043	3983	7307	6604	1625	9625	13465
84	134	218	8656	5458	7856	6098	709	9442	14164

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
84	135	219	12918	3809	8003	5561	2505	9268	14877
84	136	220	15723	5265	8546	5055	1604	9075	15571
84	137	221	20167	3627	8689	4525	3386	8892	16273
84	138	222	23172	5066	9222	4030	2492	8693	16951
84	139	223	27803	3440	9356	3515	4254	8506	17632
84	140	224	31010	4864	9873	3040	3361	8304	18286
84	141	225	35831	3250	9995	2548	5098	8114	18940
84	142	226	39241	4660	10496	2097	4203	7911	19564
84	143	227	44252	3060	10603	1633	5913	7721	20186
84	144	228	47865	4458	11086	1211	5012	7519	20777
84	145	229	53064	2872	11177	778	6692	7330	21364
84	146	230	56877	4258	11640	387	5784	7130	21920
84	147	231	62262	2686	11715	-13	7434	6944	22470
84	148	232	66273	4060	12159	-371	6517	6747	22990
84	149	233	71840	2503	12217	-740	8137	6564	23504
84	150	234	76044	3867	12640	-1065	7211	6371	23987
84	151	235	81791	2324	12683	-1401	8800	6192	24464
84	152	236	86184	3678	13087	-1694	7865	6003	24910
84	153	237	92105	2150	13113	-1996	9424	5828	25351
84	154	238	96682	3493	13498	-2258	8481	5643	25762
84	155	239	102774	1979	13508	-2529	10010	5473	26168
84	156	240	107531	3313	13875	-2760	9058	5293	26544
84	157	241	113789	1814	13870	-3000	10559	5127	26916
84	158	242	118721	3138	14220	-3201	9599	4952	27259
84	159	243	125139	1653	14201	-3412	11072	4791	27598
84	160	244	130242	2968	14534	-3585	10105	4621	27910
84	161	245	136816	1497	14502	-3768	11552	4465	28218
84	162	246	142084	2803	14819	-3915	10579	4300	28500
84	163	247	148810	1345	14774	-4071	11999	4149	28779
84	164	248	154237	2643	15077	-4194	11021	3989	29033
84	165	249	161108	1200	15022	-4328	12417	3844	29286
84	166	250	166689	2490	15312	-4428	11434	3690	29516
84	167	251	173699	1060	15247	-4542	12807	3551	29746
84	168	252	179427	2343	15526	-4624	11820	3404	29954
84	169	253	186571	928	15454	-4721	13172	3271	30165
84	170	254	192438	2203	15724	-4790	12183	3131	30357
84	171	255	199707	803	15647	-4876	13515	3006	30553
84	172	256	205705	2072	15911	-4937	12526	2875	30735
84	173	257	213090	687	15833	-5017	13841	2759	30924
84	174	258	219209	1951	16095	-5078	12854	2638	31102
84	175	259	226698	582	16019	-5162	14154	2533	31291
84	176	260	232927	1842	16283	-5230	13172	2424	31475
84	177	261	240509	489	16215	-5328	14462	2332	31675
84	178	262	246833	1747	16487	-5416	13488	2237	31876

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
84	179	263	254492	412	16433	-5540	14771	2159	32101
84	180	264	260894	1668	16720	-5662	13810	2081	32333
84	181	265	268612	353	16687	-5827	15092	2022	32597
84	182	266	275074	1609	16997	-6000	14150	1963	32878
84	183	267	282830	315	16995	-6226	15436	1924	33200
84	184	268	289327	1574	17339	-6472	14520	1889	33551
85	126	211	-11748		2826				8059
85	127	212	-8606	4929	3343		256		8658
85	128	213	-6604	6068	3452	9237	-787	10998	9280
85	129	214	-3366	4833	3995	8734	966	10902	9938
85	130	215	-1237	5942	4127	8239	-21	10775	10606
85	131	216	2132	4701	4683	7712	1753	10644	11298
85	132	217	4418	5785	4826	7202	806	10487	11988
85	133	218	7946	4542	5386	6668	2588	10328	12693
85	134	219	10412	5605	5533	6158	1667	10148	13389
85	135	220	14119	4364	6087	5631	3446	9970	14091
85	136	221	16781	5409	6231	5132	2542	9773	14778
85	137	222	20680	4172	6776	4622	4309	9581	15466
85	138	223	23549	5202	6912	4143	3412	9374	16134
85	139	224	27649	3971	7443	3655	5161	9173	16799
85	140	225	30732	4987	7567	3202	4267	8959	17440
85	141	226	35038	3765	8081	2742	5992	8753	18077
85	142	227	38339	4770	8191	2318	5096	8536	18688
85	143	228	42853	3557	8688	1890	6795	8327	19291
85	144	229	46371	4552	8782	1497	5895	8110	19868
85	145	230	51093	3349	9260	1101	7565	7902	20437
85	146	231	54828	4336	9338	740	6658	7686	20979
85	147	232	59755	3144	9796	377	8299	7480	21512
85	148	233	63703	4123	9858	49	7384	7267	22017
85	149	234	68832	2941	10296	-281	8994	7064	22514
85	150	235	72990	3913	10342	-577	8071	6855	22983
85	151	236	78318	2743	10761	-876	9652	6657	23444
85	152	237	82680	3708	10792	-1140	8720	6452	23879
85	153	238	88201	2550	11192	-1408	10271	6259	24305
85	154	239	92763	3509	11207	-1643	9331	6059	24706
85	155	240	98473	2362	11590	-1881	10853	5871	25098
85	156	241	103229	3314	11590	-2087	9906	5676	25466
85	157	242	109122	2179	11955	-2296	11400	5493	25826
85	158	243	114067	3126	11943	-2475	10445	5305	26163
85	159	244	120136	2001	12292	-2659	11912	5128	26493
85	160	245	125264	2943	12266	-2812	10950	4945	26800
85	161	246	131505	1830	12600	-2971	12391	4773	27102
85	162	247	136810	2766	12563	-3102	11423	4597	27382

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
85	163	248	143216	1665	12882	-3238	12839	4431	27657
85	164	249	148691	2596	12835	-3348	11866	4261	27912
85	165	250	155255	1507	13142	-3465	13258	4103	28164
85	166	251	160892	2433	13085	-3558	12281	3941	28397
85	167	252	167607	1356	13381	-3659	13650	3790	28629
85	168	253	173399	2279	13317	-3738	12669	3636	28843
85	169	254	180255	1215	13604	-3828	14017	3494	29059
85	170	255	186191	2135	13536	-3898	13034	3350	29260
85	171	256	193179	1083	13816	-3982	14362	3218	29464
85	172	257	199248	2001	13746	-4050	13378	3085	29657
85	173	258	206355	964	14023	-4135	14688	2966	29857
85	174	259	212544	1882	13954	-4209	13705	2847	30049
85	175	260	219755	860	14232	-4304	14999	2742	30252
85	176	261	226047	1778	14169	-4393	14019	2639	30452
85	177	262	233344	773	14453	-4509	15301	2552	30668
85	178	263	239721	1695	14401	-4626	14327	2469	30888
85	179	264	247084	708	14697	-4776	15599	2403	31130
85	180	265	253520	1634	14663	-4936	14635	2342	31383
85	181	266	260923	668	14977	-5137	15902	2302	31665
85	182	267	267393	1601	14969	-5357	14952	2269	31967
85	183	268	274806	658	15312	-5629	16219	2259	32308
85	184	269	281276	1601	15340	-5931	15289	2260	32680
86	126	212	-8863		4403				7229
86	127	213	-5816	5025	4498		-2219		7842
86	128	214	-4332	6586	5017	9454	-3261	11611	8469
86	129	215	-1216	4955	5138	8911	-1517	11541	9134
86	130	216	378	6476	5673	8394	-2500	11431	9800
86	131	217	3612	4837	5809	7846	-731	11314	10492
86	132	218	5357	6325	6349	7331	-1671	11163	11176
86	133	219	8744	4684	6490	6793	107	11010	11877
86	134	220	10672	6143	7028	6291	-804	10828	12562
86	135	221	14239	4504	7169	5770	973	10648	13256
86	136	222	16371	5939	7699	5289	80	10443	13930
86	137	223	20136	4305	7832	4793	1847	10245	14608
86	138	224	22488	5719	8350	4339	963	10025	15262
86	139	225	26465	4094	8472	3872	2714	9813	15916
86	140	226	29046	5490	8975	3448	1834	9584	16542
86	141	227	33242	3875	9085	3013	3562	9365	17167
86	142	228	36057	5256	9570	2621	2681	9131	17762
86	143	229	40476	3652	9665	2220	4384	8908	18353
86	144	230	43527	5020	10132	1860	3500	8672	18915
86	145	231	48169	3429	10212	1492	5175	8449	19472
86	146	232	51456	4784	10661	1165	4284	8214	19999

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
86	147	233	56319	3208	10725	829	5930	7993	20521
86	148	234	59838	4552	11154	535	5032	7760	21012
86	149	235	64918	2990	11202	231	6648	7542	21499
86	150	236	68665	4324	11613	-32	5742	7314	21956
86	151	237	73960	2776	11646	-305	7329	7101	22408
86	152	238	77930	4101	12039	-539	6415	6878	22831
86	153	239	83432	2569	12058	-783	7973	6670	23250
86	154	240	87619	3884	12433	-989	7050	6453	23641
86	155	241	93323	2366	12438	-1206	8580	6251	24028
86	156	242	97721	3673	12797	-1386	7650	6040	24388
86	157	243	103622	2170	12788	-1576	9152	5844	24744
86	158	244	108224	3469	13131	-1732	8215	5640	25075
86	159	245	114314	1981	13111	-1899	9690	5450	25403
86	160	246	119114	3271	13439	-2032	8746	5252	25706
86	161	247	125386	1798	13407	-2177	10196	5070	26007
86	162	248	130376	3081	13722	-2290	9246	4879	26285
86	163	249	136824	1623	13680	-2417	10670	4704	26563
86	164	250	141996	2899	13983	-2512	9716	4522	26818
86	165	251	148611	1456	13932	-2623	11116	4355	27074
86	166	252	153956	2725	14224	-2705	10157	4182	27310
86	167	253	160729	1298	14166	-2803	11534	4024	27548
86	168	254	166237	2563	14450	-2876	10571	3861	27768
86	169	255	173157	1151	14386	-2967	11927	3714	27991
86	170	256	178816	2411	14663	-3035	10961	3563	28199
86	171	257	185870	1017	14597	-3125	12296	3429	28414
86	172	258	191666	2274	14870	-3196	11328	3292	28616
86	173	259	198838	899	14805	-3292	12644	3174	28828
86	174	260	204755	2154	15077	-3375	11676	3054	29032
86	175	261	212027	798	15016	-3487	12975	2953	29249
86	176	262	218043	2055	15292	-3590	12007	2854	29462
86	177	263	225393	721	15240	-3730	13290	2776	29693
86	178	264	231484	1980	15525	-3868	12326	2701	29926
86	179	265	238885	670	15487	-4048	13597	2650	30184
86	180	266	245021	1935	15787	-4236	12638	2605	30450
86	181	267	252441	651	15771	-4475	13900	2586	30749
86	182	268	258587	1925	16095	-4732	12951	2577	31065
86	183	269	265986	671	16108	-5050	14207	2597	31421
86	184	270	272100	1957	16464	-5399	13272	2629	31805
87	126	213	-3597		2023				6426
87	127	214	-1070	5545	2542		-1173		7041
87	128	215	301	6698	2655	9625	-2230	12243	7672
87	129	216	2878	5494	3194	9060	-513	12193	8333
87	130	217	4343	6606	3323	8522	-1508	12100	8997

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
87	131	218	7029	5385	3871	7970	236	11991	9680
87	132	219	8637	6463	4009	7449	-712	11848	10358
87	133	220	11476	5232	4557	6919	1045	11695	11048
87	134	221	13265	6282	4695	6422	127	11514	11724
87	135	222	16290	5046	5237	5919	1888	11328	12406
87	136	223	18289	6072	5370	5452	990	11118	13069
87	137	224	21524	4836	5901	4980	2742	10909	13733
87	138	225	23751	5844	6025	4545	1856	10680	14375
87	139	226	27211	4610	6542	4106	3594	10455	15015
87	140	227	29679	5603	6655	3705	2713	10214	15630
87	141	228	33375	4375	7155	3301	4430	9978	16240
87	142	229	36091	5355	7254	2934	3550	9730	16825
87	143	230	40027	4135	7737	2564	5243	9490	17403
87	144	231	42994	5104	7822	2230	4360	9239	17955
87	145	232	47171	3894	8286	1893	6026	8998	18499
87	146	233	50388	4854	8356	1591	5138	8748	19017
87	147	234	54805	3654	8802	1287	6777	8508	19527
87	148	235	58270	4607	8856	1016	5882	8261	20011
87	149	236	62923	3418	9284	743	7492	8025	20487
87	150	237	66630	4364	9324	502	6590	7782	20938
87	151	238	71514	3187	9734	256	8171	7551	21381
87	152	239	75458	4127	9760	43	7262	7314	21799
87	153	240	80568	2961	10152	-174	8814	7089	22211
87	154	241	84743	3896	10165	-362	7897	6858	22598
87	155	242	90071	2743	10541	-555	9422	6639	22979
87	156	243	94469	3672	10541	-719	8498	6416	23338
87	157	244	100009	2531	10901	-888	9996	6204	23690
87	158	245	104624	3456	10889	-1030	9065	5988	24021
87	159	246	110367	2327	11236	-1179	10536	5784	24347
87	160	247	115190	3247	11212	-1301	9599	5575	24651
87	161	248	121130	2131	11545	-1431	11045	5379	24952
87	162	249	126153	3048	11512	-1536	10102	5179	25234
87	163	250	132280	1944	11833	-1649	11523	4992	25513
87	164	251	137494	2857	11790	-1740	10575	4801	25774
87	165	252	143799	1766	12100	-1841	11973	4623	26033
87	166	253	149194	2676	12051	-1921	11020	4442	26276
87	167	254	155666	1599	12352	-2013	12395	4276	26519
87	168	255	161229	2507	12297	-2087	11437	4107	26747
87	169	256	167855	1445	12590	-2176	12790	3953	26977
87	170	257	173573	2353	12532	-2250	11829	3798	27196
87	171	258	180338	1306	12821	-2341	13161	3659	27418
87	172	259	186194	2215	12761	-2422	12197	3522	27632
87	173	260	193079	1186	13048	-2524	13508	3401	27853
87	174	261	199052	2097	12991	-2620	12542	3283	28069



Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
87	175	262	206036	1087	13280	-2743	13834	3185	28296
87	176	263	212102	2004	13229	-2866	12867	3092	28522
87	177	264	219158	1015	13524	-3021	14141	3020	28764
87	178	265	225288	1941	13485	-3184	13174	2957	29010
87	179	266	232383	976	13791	-3386	14433	2917	29278
87	180	267	238540	1913	13769	-3605	13468	2890	29557
87	181	268	245635	976	14094	-3872	14713	2889	29865
87	182	269	251778	1928	14097	-4166	13752	2904	30192
87	183	270	258827	1022	14447	-4520	14987	2950	30556
87	184	271	264905	1994	14484	-4913	14034	3016	30949
88	126	214	102		3590				5612
88	127	215	2532	5641	3685		-3622		6228
88	128	216	3392	7211	4198	9830	-4681	12852	6853
88	129	217	5852	5611	4315	9244	-2976	12822	7509
88	130	218	6792	7130	4839	8700	-3969	12742	8163
88	131	219	9350	5513	4968	8141	-2231	12644	8839
88	132	220	10430	6990	5495	7627	-3175	12504	9505
88	133	221	13137	5364	5627	7100	-1422	12355	10184
88	134	222	14402	6806	6151	6620	-2332	12170	10847
88	135	223	17298	5175	6281	6129	-574	11981	11518
88	136	224	18781	6588	6796	5684	-1461	11763	12167
88	137	225	21894	4958	6918	5230	289	11547	12820
88	138	226	23617	6347	7422	4821	-583	11306	13448
88	139	227	26966	4722	7534	4404	1154	11070	14077
88	140	228	28945	6092	8023	4032	288	10815	14678
88	141	229	32541	4475	8123	3650	2008	10567	15279
88	142	230	34784	5828	8596	3313	1143	10303	15851
88	143	231	38634	4221	8682	2966	2840	10049	16420
88	144	232	41144	5560	9138	2662	1974	9782	16960
88	145	233	45249	3966	9210	2348	3645	9526	17497
88	146	234	48028	5292	9649	2075	2774	9259	18005
88	147	235	52387	3712	9707	1792	4419	9005	18509
88	148	236	55430	5028	10128	1549	3542	8740	18985
88	149	237	60039	3462	10172	1295	5160	8490	19457
88	150	238	63342	4768	10576	1079	4276	8230	19900
88	151	239	68196	3217	10606	852	5865	7985	20341
88	152	240	71753	4514	10994	662	4974	7732	20754
88	153	241	76845	2979	11011	460	6535	7493	21164
88	154	242	80648	4268	11383	293	5637	7247	21548
88	155	243	85971	2748	11388	114	7171	7016	21930
88	156	244	90012	4029	11745	-31	6266	6778	22286
88	157	245	95558	2525	11739	-189	7773	6555	22641
88	158	246	99830	3799	12082	-315	6861	6324	22971

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
88	159	247	105591	2310	12064	-455	8342	6110	23300
88	160	248	110084	3577	12394	-564	7424	5888	23607
88	161	249	116051	2104	12368	-688	8880	5682	23913
88	162	250	120756	3366	12686	-782	7956	5470	24198
88	163	251	126919	1908	12650	-892	9387	5274	24483
88	164	252	131826	3164	12957	-975	8457	5072	24748
88	165	253	138174	1723	12914	-1075	9865	4887	25015
88	166	254	143270	2974	13212	-1150	8930	4698	25263
88	167	255	149791	1550	13163	-1244	10314	4525	25515
88	168	256	155064	2798	13453	-1316	9374	4348	25750
88	169	257	161743	1392	13400	-1410	10736	4190	25991
88	170	258	167177	2638	13685	-1485	9791	4030	26217
88	171	259	173996	1251	13630	-1585	11130	3889	26451
88	172	260	179570	2497	13912	-1670	10182	3748	26673
88	173	261	186510	1131	13857	-1784	11499	3628	26906
88	174	262	192202	2379	14139	-1889	10546	3511	27131
88	175	263	199235	1037	14089	-2028	11842	3417	27370
88	176	264	205016	2290	14374	-2163	10886	3327	27604
88	177	265	212113	974	14333	-2339	12161	3264	27858
88	178	266	217950	2234	14627	-2518	11202	3209	28112
88	179	267	225072	948	14599	-2746	12459	3183	28390
88	180	268	230922	2221	14907	-2986	11497	3170	28677
88	181	269	238025	968	14899	-3284	12736	3189	28993
88	182	270	243840	2256	15227	-3606	11774	3225	29324
88	183	271	250870	1041	15246	-3996	12996	3298	29694
88	184	272	256589	2351	15604	-4422	12036	3393	30088
89	126	215	6155		1236				4825
89	127	216	8074	6152	1747		-2578		5433
89	128	217	8828	7316	1852	10000	-3654	13469	6050
89	129	218	10761	6138	2379	9407	-1978	13455	6694
89	130	219	11581	7251	2499	8855	-2985	13389	7339
89	131	220	13606	6046	3032	8302	-1272	13298	8000
89	132	221	14559	7117	3159	7791	-2227	13164	8655
89	133	222	16734	5896	3691	7280	-495	13013	9319
89	134	223	17873	6932	3818	6811	-1413	12829	9970
89	135	224	20243	5701	4344	6342	325	12634	10625
89	136	225	21604	6710	4466	5913	-566	12411	11262
89	137	226	24201	5474	4982	5485	1169	12184	11901
89	138	227	25811	6461	5095	5097	293	11935	12518
89	139	228	28656	5225	5598	4707	2018	11687	13132
89	140	229	30532	6195	5701	4356	1150	11420	13724
89	141	230	33640	4963	6189	4004	2859	11158	14312
89	142	231	35793	5918	6280	3688	1995	10882	14876

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
89	143	232	39170	4693	6752	3370	3682	10612	15434
89	144	233	41603	5638	6830	3087	2818	10332	15968
89	145	234	45253	4421	7285	2800	4481	10059	16496
89	146	235	47967	5357	7350	2547	3614	9778	16999
89	147	236	51887	4151	7788	2291	5252	9508	17496
89	148	237	54879	5079	7839	2066	4379	9230	17968
89	149	238	59066	3884	8262	1835	5991	8963	18434
89	150	239	62331	4806	8300	1636	5112	8691	18877
89	151	240	66778	3623	8706	1430	6696	8430	19313
89	152	241	70309	4540	8732	1254	5811	8164	19727
89	153	242	75011	3369	9123	1071	7368	7910	20135
89	154	243	78799	4282	9137	916	6477	7652	20521
89	155	244	83746	3124	9513	753	8007	7406	20902
89	156	245	87785	4032	9516	617	7109	7156	21261
89	157	246	92969	2887	9878	473	8613	6920	21617
89	158	247	97249	3791	9870	354	7708	6679	21952
89	159	248	102660	2659	10219	226	9187	6451	22284
89	160	249	107171	3560	10202	122	8276	6220	22597
89	161	250	112800	2442	10539	8	9730	6002	22907
89	162	251	117531	3339	10513	-83	8814	5781	23199
89	163	252	123368	2234	10839	-186	10243	5574	23490
89	164	253	128309	3130	10806	-269	9321	5365	23763
89	165	254	134340	2040	11122	-365	10726	5170	24037
89	166	255	139477	2934	11082	-442	9799	4974	24295
89	167	256	145689	1858	11390	-534	11180	4793	24554
89	168	257	151007	2753	11346	-611	10248	4612	24799
89	169	258	157385	1693	11647	-706	11606	4447	25048
89	170	259	162865	2590	11599	-788	10667	4284	25285
89	171	260	169388	1548	11897	-891	12002	4139	25527
89	172	261	175011	2448	11848	-987	11058	3997	25760
89	173	262	181655	1427	12144	-1107	12370	3875	26001
89	174	263	187393	2333	12097	-1225	11420	3760	26237
89	175	264	194130	1334	12394	-1373	12709	3667	26483
89	176	265	199951	2249	12354	-1525	11753	3584	26728
89	177	266	206747	1275	12655	-1714	13018	3525	26989
89	178	267	212613	2204	12625	-1914	12056	3480	27252
89	179	268	219424	1260	12936	-2158	13300	3465	27536
89	180	269	225289	2206	12921	-2423	12332	3466	27829
89	181	270	232065	1295	13249	-2742	13552	3501	28148
89	182	271	237873	2263	13256	-3092	12579	3559	28483
89	183	272	244553	1391	13605	-3507	13779	3655	28852
89	184	273	250237	2387	13641	-3966	12800	3778	29245
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90	126	216	10652		2792				4027

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
90	127	217	12483	6239	2879		-4993		4626
90	128	218	12740	7814	3377	10212	-6073	14054	5230
90	129	219	14567	6244	3483	9609	-4410	14059	5863
90	130	220	14879	7759	3991	9061	-5416	14003	6491
90	131	221	16787	6162	4107	8510	-3713	13922	7140
90	132	222	17230	7628	4618	8012	-4664	13791	7777
90	133	223	19286	6015	4737	7511	-2939	13643	8428
90	134	224	19917	7440	5244	7062	-3850	13455	9063
90	135	225	22171	5817	5361	6608	-2115	13258	9705
90	136	226	23031	7210	5861	6204	-2999	13028	10327
90	137	227	25518	5584	5972	5794	-1264	12795	10954
90	138	228	26638	6950	6461	5432	-2129	12535	11556
90	139	229	29382	5327	6563	5062	-403	12278	12161
90	140	230	30781	6671	7040	4739	-1258	11999	12741
90	141	231	33798	5054	7131	4407	452	11726	13320
90	142	232	35488	6381	7594	4117	-396	11436	13874
90	143	233	38785	4773	7674	3819	1294	11155	14426
90	144	234	40771	6085	8121	3562	446	10859	14951
90	145	235	44353	4489	8189	3294	2115	10575	15474
90	146	236	46635	5789	8621	3065	1264	10278	15971
90	147	237	50499	4206	8676	2825	2909	9995	16465
90	148	238	53075	5495	9093	2622	2054	9702	16933
90	149	239	57218	3927	9136	2406	3673	9423	17398
90	150	240	60082	5207	9538	2226	2813	9135	17838
90	151	241	64498	3655	9569	2033	4406	8863	18276
90	152	242	67642	4927	9956	1874	3539	8582	18689
90	153	243	72322	3390	9977	1701	5106	8317	19100
90	154	244	75739	4655	10349	1560	4233	8045	19487
90	155	245	80676	3134	10359	1406	5774	7789	19872
90	156	246	84355	4392	10718	1282	4895	7526	20235
90	157	247	89540	2886	10718	1143	6409	7278	20596
90	158	248	93473	4138	11065	1035	5524	7025	20935
90	159	249	98894	2650	11055	910	7013	6788	21275
90	160	250	103069	3895	11390	814	6122	6545	21593
90	161	251	108717	2423	11371	701	7587	6319	21911
90	162	252	113124	3664	11696	615	6690	6087	22209
90	163	253	118987	2208	11669	511	8129	5872	22509
90	164	254	123613	3445	11984	432	7227	5653	22790
90	165	255	129677	2007	11951	333	8642	5452	23074
90	166	256	134508	3240	12257	257	7733	5247	23339
90	167	257	140759	1820	12219	160	9124	5060	23609
90	168	258	145778	3052	12517	82	8210	4872	23863
90	169	259	152198	1651	12475	-18	9576	4704	24123
90	170	260	157385	2883	12769	-103	8655	4535	24369

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
90	171	261	163952	1504	12724	-216	9997	4388	24622
90	172	262	169284	2738	13015	-316	9069	4243	24863
90	173	263	175972	1383	12971	-448	10386	4122	25115
90	174	264	181421	2622	13260	-574	9450	4006	25358
90	175	265	188198	1294	13220	-736	10742	3916	25615
90	176	266	193728	2541	13512	-898	9797	3835	25866
90	177	267	200556	1242	13479	-1103	11064	3784	26134
90	178	268	206124	2503	13777	-1317	10110	3746	26403
90	179	269	212957	1238	13756	-1580	11350	3741	26692
90	180	270	218512	2516	14065	-1862	10386	3754	26987
90	181	271	225293	1290	14060	-2203	11600	3806	27310
90	182	272	230774	2590	14387	-2573	10625	3881	27643
90	183	273	237436	1409	14405	-3014	11812	4000	28011
90	184	274	242768	2739	14757	-3496	10826	4148	28399
91	126	217	17477		464				3256
91	127	218	18813	6735	959		-3942		3838
91	128	219	18977	7907	1051	10396	-5041	14642	4429
91	129	220	20295	6753	1560	9796	-3408	14660	5044
91	130	221	20501	7865	1666	9247	-4430	14618	5658
91	131	222	21895	6677	2181	8708	-2754	14542	6288
91	132	223	22226	7740	2293	8219	-3717	14417	6911
91	133	224	23768	6529	2807	7737	-2014	14269	7544
91	134	225	24286	7553	2919	7301	-2934	14082	8164
91	135	226	26030	6327	3429	6870	-1219	13880	8790
91	136	227	26782	7319	3538	6484	-2108	13646	9399
91	137	228	28768	6085	4038	6099	-390	13405	10010
91	138	229	29786	7053	4141	5756	-1260	13139	10603
91	139	230	32040	5817	4631	5413	451	12870	11194
91	140	231	33345	6765	4725	5109	-404	12583	11765
91	141	232	35885	5531	5202	4803	1294	12297	12333
91	142	233	37490	6465	5286	4532	445	11997	12880
91	143	234	40325	5236	5749	4259	2126	11702	13423
91	144	235	42237	6159	5822	4019	1279	11395	13943
91	145	236	45370	4938	6271	3774	2940	11097	14460
91	146	237	47590	5851	6333	3561	2093	10789	14954
91	147	238	51020	4640	6767	3342	3731	10492	15444
91	148	239	53545	5547	6819	3152	2880	10188	15912
91	149	240	57268	4347	7238	2956	4494	9894	16375
91	150	241	60091	5248	7279	2787	3639	9595	16817
91	151	242	64102	4061	7684	2610	5227	9309	17254
91	152	243	67216	4956	7714	2460	4367	9018	17671
91	153	244	71505	3782	8106	2301	5930	8739	18083
91	154	245	74902	4674	8125	2167	5064	8456	18475

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
91	155	246	79460	3513	8505	2024	6601	8187	18864
91	156	247	83130	4401	8514	1905	5730	7914	19233
91	157	248	87948	3253	8880	1776	7242	7654	19599
91	158	249	91880	4139	8881	1669	6365	7392	19946
91	159	250	96946	3004	9236	1552	7852	7143	20291
91	160	251	101130	3887	9228	1456	6969	6892	20618
91	161	252	106434	2767	9572	1348	8432	6654	20943
91	162	253	110857	3648	9556	1261	7543	6415	21252
91	163	254	116386	2542	9890	1160	8981	6190	21559
91	164	255	121035	3422	9867	1078	8087	5964	21851
91	165	256	126775	2331	10191	981	9500	5754	22143
91	166	257	131634	3211	10163	900	8599	5543	22420
91	167	258	137568	2137	10479	803	9989	5349	22699
91	168	259	142621	3018	10446	719	9081	5156	22964
91	169	260	148730	1962	10756	615	10445	4980	23232
91	170	261	153954	2847	10720	522	9530	4809	23489
91	171	262	160215	1810	11025	405	10869	4657	23750
91	172	263	165585	2701	10988	294	9945	4511	24003
91	173	264	171970	1686	11290	157	11258	4387	24262
91	174	265	177455	2586	11254	19	10324	4272	24515
91	175	266	183930	1596	11557	-149	11610	4183	24778
91	176	267	189492	2509	11525	-325	10665	4106	25037
91	177	268	196014	1548	11831	-540	11923	4058	25310
91	178	269	201606	2479	11807	-769	10966	4028	25584
91	179	270	208126	1551	12120	-1045	12194	4030	25876
91	180	271	213693	2504	12108	-1345	11223	4056	26174
91	181	272	220148	1615	12434	-1701	12421	4120	26494
91	182	273	225623	2596	12439	-2091	11434	4212	26827
91	183	274	231941	1753	12783	-2548	12600	4349	27189
91	184	275	237244	2768	12813	-3053	11597	4521	27570
92	126	218	22756		2010				2474
92	127	219	24019	6808	2083		-6318		3042
92	128	220	23704	8386	2562	10626	-7421	15194	3613
92	129	221	24931	6843	2652	10023	-5802	15229	4212
92	130	222	24649	8353	3140	9484	-6825	15197	4807
92	131	223	25943	6777	3240	8951	-5160	15130	5421
92	132	224	25782	8231	3732	8479	-6120	15009	6025
92	133	225	27221	6632	3835	8008	-4426	14864	6643
92	134	226	27249	8042	4325	7594	-5341	14675	7245
92	135	227	28891	6429	4428	7179	-3630	14472	7857
92	136	228	29159	7803	4912	6816	-4513	14233	8450
92	137	229	31046	6184	5011	6450	-2797	13987	9049
92	138	230	31588	7529	5486	6131	-3657	13713	9628

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
92	139	231	33750	5909	5578	5807	-1945	13438	10209
92	140	232	34590	7230	6043	5527	-2790	13140	10769
92	141	233	37045	5616	6128	5238	-1089	12847	11330
92	142	234	38198	6918	6581	4992	-1925	12534	11867
92	143	235	40958	5311	6656	4734	-240	12230	12405
92	144	236	42429	6599	7096	4516	-1072	11911	12919
92	145	237	45497	5003	7162	4286	593	11603	13433
92	146	238	47289	6278	7589	4093	-238	11282	13923
92	147	239	50664	4696	7645	3886	1405	10975	14413
92	148	240	52774	5961	8059	3714	572	10657	14878
92	149	241	56452	4393	8104	3528	2193	10354	15343
92	150	242	58874	5649	8506	3374	1356	10042	15785
92	151	243	62849	4096	8541	3205	2952	9746	16226
92	152	244	65575	5345	8930	3068	2111	9442	16644
92	153	245	69838	3808	8956	2915	3683	9153	17062
92	154	246	72858	5050	9332	2791	2836	8859	17458
92	155	247	77400	3529	9349	2652	4383	8580	17854
92	156	248	80705	4765	9713	2541	3531	8295	18228
92	157	249	85515	3261	9722	2413	5054	8027	18603
92	158	250	89094	4492	10075	2313	4196	7754	18956
92	159	251	94161	3004	10074	2195	5694	7496	19311
92	160	252	98002	4230	10417	2104	4831	7234	19645
92	161	253	103314	2759	10409	1994	6304	6989	19981
92	162	254	107404	3980	10742	1909	5435	6740	20298
92	163	255	112948	2527	10726	1805	6884	6508	20617
92	164	256	117274	3745	11050	1724	6008	6273	20917
92	165	257	123034	2310	11029	1622	7433	6056	21220
92	166	258	127579	3526	11344	1540	6550	5837	21507
92	167	259	133539	2110	11317	1437	7950	5637	21797
92	168	260	138284	3326	11625	1350	7060	5437	22072
92	169	261	144424	1931	11595	1239	8433	5258	22351
92	170	262	149346	3149	11897	1142	7535	5080	22617
92	171	263	155640	1777	11864	1017	8882	4926	22890
92	172	264	160712	2999	12162	901	7974	4776	23150
92	173	265	167130	1652	12128	753	9293	4652	23419
92	174	266	172319	2882	12424	609	8373	4535	23679
92	175	267	178826	1565	12393	428	9663	4447	23950
92	176	268	184090	2806	12690	244	8730	4371	24215
92	177	269	190640	1522	12663	16	9989	4328	24494
92	178	270	195931	2779	12964	-221	9040	4302	24771
92	179	271	202469	1533	12945	-512	10267	4313	25066
92	180	272	207727	2813	13254	-822	9300	4346	25362
92	181	273	214188	1610	13248	-1193	10492	4423	25682
92	182	274	219341	2918	13570	-1596	9505	4528	26010

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
92	183	275	225647	1765	13583	-2071	10659	4684	26366
92	184	276	230608	3109	13924	-2590	9650	4875	26737
93	126	219	30337		-293				1717
93	127	220	31125	7283	182		-5258		2265
93	128	221	30734	8462	258	10832	-6380	15745	2820
93	129	222	31474	7331	746	10236	-4792	15793	3398
93	130	223	31103	8442	834	9701	-5831	15773	3975
93	131	224	31903	7271	1328	9183	-4192	15713	4569
93	132	225	31647	8327	1424	8721	-5166	15598	5156
93	133	226	32591	7127	1919	8270	-3495	15455	5755
93	134	227	32522	8140	2016	7870	-4420	15268	6342
93	135	228	33672	6921	2508	7478	-2730	15061	6936
93	136	229	33843	7899	2604	7132	-3619	14821	7516
93	137	230	35245	6669	3089	6789	-1922	14569	8100
93	138	231	35695	7620	3181	6488	-2786	14290	8668
93	139	232	37380	6386	3658	6187	-1090	14007	9237
93	140	233	38135	7316	3744	5924	-1937	13703	9788
93	141	234	40124	6082	4210	5659	-249	13399	10338
93	142	235	41198	6997	4289	5427	-1086	13079	10870
93	143	236	43502	5767	4744	5192	587	12764	11400
93	144	237	44904	6669	4814	4988	-243	12436	11911
93	145	238	47528	5447	5258	4777	1413	12116	12420
93	146	239	49258	6340	5320	4596	583	11787	12909
93	147	240	52202	5127	5751	4406	2220	11468	13396
93	148	241	54259	6014	5804	4244	1390	11141	13863
93	149	242	57518	4812	6223	4072	3005	10826	14328
93	150	243	59896	5693	6267	3926	2173	10505	14773
93	151	244	63463	4503	6674	3770	3765	10197	15216
93	152	245	66154	5380	6709	3637	2929	9884	15639
93	153	246	70021	4204	7105	3494	4497	9584	16061
93	154	247	73016	5076	7131	3374	3657	9281	16464
93	155	248	77173	3913	7515	3243	5201	8990	16864
93	156	249	80460	4784	7533	3133	4356	8698	17247
93	157	250	84897	3634	7906	3012	5876	8418	17628
93	158	251	88466	4502	7916	2911	5026	8136	17991
93	159	252	93171	3366	8278	2797	6523	7869	18353
93	160	253	97009	4232	8281	2704	5667	7599	18698
93	161	254	101969	3111	8633	2597	7139	7344	19043
93	162	255	106064	3976	8629	2508	6278	7088	19371
93	163	256	111265	2870	8972	2405	7726	6846	19699
93	164	257	115601	3734	8961	2319	6858	6604	20011
93	165	258	121028	2644	9295	2217	8282	6379	20324
93	166	259	125589	3510	9278	2129	7407	6154	20622



Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
93	167	260	131224	2436	9604	2024	8805	5947	20922
93	168	261	135990	3305	9583	1930	7922	5742	21208
93	169	262	141810	2251	9902	1817	9294	5556	21497
93	170	263	146757	3124	9877	1711	8402	5375	21774
93	171	264	152738	2090	10190	1583	9746	5215	22055
93	172	265	157837	2972	10163	1457	8843	5062	22326
93	173	266	163946	1962	10473	1305	10158	4934	22602
93	174	267	169162	2855	10446	1151	9242	4817	22870
93	175	268	175360	1873	10754	964	10526	4728	23147
93	176	269	180650	2781	10729	770	9594	4654	23419
93	177	270	186890	1831	11038	535	10845	4612	23701
93	178	271	192202	2759	11018	285	9895	4591	23982
93	179	272	198426	1846	11331	-12	11110	4606	24277
93	180	273	203696	2801	11320	-335	10138	4648	24574
93	181	274	209836	1931	11641	-715	11315	4733	24890
93	182	275	214987	2919	11643	-1130	10318	4851	25213
93	183	276	220958	2100	11978	-1615	11453	5020	25561
93	184	277	225900	3129	11997	-2148	10429	5229	25922
94	126	220	36383		1243				950
94	127	221	37115	7339	1298		-7591		1481
94	128	222	36267	8919	1756	11086	-8718	16259	2014
94	129	223	36934	7403	1828	10490	-7144	16323	2575
94	130	224	36096	8909	2296	9967	-8185	16313	3131
94	131	225	36814	7353	2378	9457	-6558	16263	3707
94	132	226	36086	8799	2850	9011	-7530	16152	4274
94	133	227	36942	7214	2937	8574	-5868	16014	4856
94	134	228	36402	8611	3408	8194	-6789	15826	5425
94	135	229	37463	7009	3497	7817	-5105	15621	6005
94	136	230	37167	8367	3965	7492	-5989	15377	6569
94	137	231	38482	6756	4051	7166	-4295	15123	7141
94	138	232	38471	8082	4513	6887	-5151	14839	7695
94	139	233	40073	6469	4596	6602	-3456	14552	8255
94	140	234	40374	7770	5050	6360	-4293	14239	8794
94	141	235	42285	6160	5128	6110	-2605	13930	9338
94	142	236	42914	7441	5572	5899	-3430	13601	9861
94	143	237	45147	5838	5643	5677	-1753	13280	10388
94	144	238	46114	7104	6078	5491	-2571	12942	10892
94	145	239	48674	5511	6142	5292	-910	12615	11400
94	146	240	49981	6764	6566	5126	-1725	12275	11886
94	147	241	52868	5184	6622	4946	-83	11948	12373
94	148	242	54512	6427	7035	4798	-897	11611	12839
94	149	243	57723	4861	7084	4633	724	11288	13307
94	150	244	59698	6095	7486	4498	-91	10956	13754

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
94	151	245	63225	4544	7527	4347	1508	10640	14201
94	152	246	65524	5772	7919	4224	689	10316	14628
94	153	247	69358	4236	7951	4084	2266	10009	15057
94	154	248	71972	5458	8333	3972	1444	9694	15464
94	155	249	76104	3939	8358	3841	2997	9397	15873
94	156	250	79020	5154	8729	3737	2171	9094	16262
94	157	251	83439	3652	8746	3614	3701	8807	16653
94	158	252	86648	4862	9107	3517	2870	8515	17024
94	159	253	91342	3377	9117	3401	4376	8240	17396
94	160	254	94829	4583	9469	3310	3541	7961	17750
94	161	255	99785	3115	9472	3199	5023	7699	18106
94	162	256	103538	4317	9814	3111	4181	7433	18443
94	163	257	108742	2867	9811	3003	5639	7185	18783
94	164	258	112746	4067	10144	2917	4791	6935	19105
94	165	259	118182	2635	10135	2809	6224	6703	19430
94	166	260	122418	3834	10460	2719	5369	6470	19738
94	167	261	128067	2422	10445	2607	6776	6257	20050
94	168	262	132516	3622	10763	2511	5912	6045	20346
94	169	263	138355	2232	10744	2390	7293	5854	20646
94	170	264	142991	3435	11055	2282	6418	5667	20932
94	171	265	148994	2068	11033	2144	7770	5503	21224
94	172	266	153787	3277	11338	2016	6883	5346	21502
94	173	267	159920	1938	11314	1855	8205	5216	21788
94	174	268	164834	3157	11617	1697	7303	5096	22063
94	175	269	171056	1849	11593	1500	8593	5006	22347
94	176	270	176045	3082	11894	1300	7673	4931	22623
94	177	271	182307	1809	11872	1056	8926	4891	22910
94	178	272	187316	3061	12174	800	7985	4871	23192
94	179	273	193557	1830	12158	492	9200	4891	23489
94	180	274	198521	3108	12464	164	8235	4938	23784
94	181	275	204668	1923	12456	-225	9407	5032	24098
94	182	276	209504	3235	12771	-647	8413	5158	24414
94	183	277	215470	2105	12776	-1142	9539	5340	24754
94	184	278	220084	3457	13104	-1681	8511	5562	25102
95	126	221	44707		-1035				207
95	127	222	44985	7793	-581		-6520		717
95	128	223	44079	8977	-523	11317	-7666	16770	1233
95	129	224	44281	7869	-57	10730	-6122	16847	1771
95	130	225	43372	8980	13	10212	-7178	16849	2309
95	131	226	43617	7826	485	9717	-5578	16806	2864
95	132	227	42811	8877	564	9282	-6564	16703	3414
95	133	228	43192	7690	1039	8863	-4925	16567	3976
95	134	229	42569	8694	1121	8497	-5858	16384	4530

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
95	135	230	43156	7483	1595	8140	-4195	16178	5093
95	136	231	42777	8450	1678	7830	-5087	15934	5643
95	137	232	43622	7226	2148	7525	-3411	15676	6200
95	138	233	43529	8164	2230	7261	-4274	15390	6744
95	139	234	44667	6933	2694	6997	-2595	15097	7290
95	140	235	44890	7848	2772	6769	-3436	14781	7822
95	141	236	46345	6616	3228	6539	-1762	14465	8356
95	142	237	46901	7515	3302	6341	-2589	14131	8874
95	143	238	48686	6286	3750	6137	-924	13801	9393
95	144	239	49585	7172	3818	5962	-1742	13458	9896
95	145	240	51706	5950	4256	5779	-91	13122	10399
95	146	241	52952	6826	4318	5623	-905	12776	10884
95	147	242	55410	5613	4747	5457	728	12439	11370
95	148	243	56998	6482	4802	5315	-82	12095	11838
95	149	244	59789	5280	5222	5162	1531	11762	12306
95	150	245	61717	6143	5270	5032	719	11424	12757
95	151	246	64834	4954	5679	4890	2313	11098	13207
95	152	247	67092	5813	5720	4771	1500	10767	13640
95	153	248	70527	4636	6120	4638	3072	10449	14072
95	154	249	73106	5492	6154	4526	2255	10128	14487
95	155	250	76848	4328	6544	4401	3805	9821	14902
95	156	251	79738	5182	6571	4296	2985	9510	15300
95	157	252	83777	4032	6951	4178	4512	9214	15698
95	158	253	86965	4883	6971	4079	3689	8915	16079
95	159	254	91288	3747	7342	3965	5193	8631	16460
95	160	255	94762	4597	7356	3870	4364	8345	16825
95	161	256	99357	3476	7717	3761	5845	8073	17189
95	162	257	103103	4325	7724	3668	5011	7801	17538
95	163	258	107955	3219	8076	3560	6468	7544	17888
95	164	259	111957	4068	8077	3468	5627	7288	18222
95	165	260	117049	2979	8421	3359	7059	7048	18556
95	166	261	121290	3830	8416	3264	6211	6809	18876
95	167	262	126603	2758	8752	3150	7618	6588	19198
95	168	263	131062	3613	8743	3047	6761	6371	19506
95	169	264	136573	2560	9071	2924	8140	6173	19815
95	170	265	141223	3421	9057	2807	7272	5981	20112
95	171	266	146904	2390	9379	2668	8622	5811	20412
95	172	267	151714	3260	9362	2531	7740	5651	20700
95	173	268	157530	2255	9678	2367	9059	5516	20993
95	174	269	162463	3138	9659	2200	8161	5393	21277
95	175	270	168372	2162	9972	2001	9446	5300	21566
95	176	271	173380	3063	9954	1792	8528	5225	21848
95	177	272	179330	2120	10265	1545	9775	5184	22137
95	178	273	184357	3045	10248	1281	8834	5165	22423

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
95	179	274	190285	2142	10561	970	10039	5187	22719
95	180	275	195260	3096	10549	633	9071	5238	23013
95	181	276	201091	2240	10865	239	10230	5336	23322
95	182	277	205931	3231	10861	-189	9229	5471	23633
95	183	278	211573	2429	11186	-687	10338	5660	23962
95	184	279	216178	3466	11195	-1233	9298	5896	24299
96	126	222	51506		490				-544
96	127	223	51746	7831	528		-8812		-52
96	128	224	50403	9413	965	11594	-9961	17245	441
96	129	225	50550	7923	1019	11010	-8431	17337	961
96	130	226	49195	9426	1465	10503	-9489	17350	1478
96	131	227	49375	7891	1530	10016	-7900	17317	2016
96	132	228	48118	9328	1981	9596	-8886	17220	2546
96	133	229	48427	7761	2053	9188	-7256	17090	3092
96	134	230	47352	9147	2506	8841	-8186	16908	3628
96	135	231	47865	7558	2580	8497	-6530	16705	4176
96	136	232	47034	8902	3032	8207	-7417	16460	4711
96	137	233	47803	7301	3107	7915	-5746	16204	5256
96	138	234	47263	8611	3555	7670	-6601	15913	5785
96	139	235	48327	7007	3629	7419	-4925	15619	6323
96	140	236	48107	8291	4072	7211	-5758	15298	6844
96	141	237	49490	6687	4143	6992	-4084	14979	7372
96	142	238	49610	7951	4579	6811	-4901	14639	7881
96	143	239	51328	6353	4647	6618	-3235	14305	8397
96	144	240	51798	7600	5075	6458	-4041	13954	8894
96	145	241	53857	6012	5138	6284	-2388	13613	9395
96	146	242	54681	7247	5559	6141	-3188	13259	9878
96	147	243	57081	5670	5617	5982	-1550	12918	10364
96	148	244	58258	6894	6029	5851	-2347	12565	10832
96	149	245	60997	5332	6081	5703	-728	12227	11303
96	150	246	62521	6547	6485	5583	-1524	11880	11755
96	151	247	65592	4999	6530	5444	75	11547	12210
96	152	248	67455	6208	6925	5331	-721	11208	12646
96	153	249	70850	4676	6966	5200	857	10884	13086
96	154	250	73043	5878	7352	5093	58	10554	13506
96	155	251	76752	4362	7385	4968	1616	10240	13930
96	156	252	79264	5559	7762	4867	814	9921	14334
96	157	253	83275	4059	7790	4746	2349	9618	14741
96	158	254	86095	5251	8158	4649	1544	9311	15130
96	159	255	90397	3768	8179	4533	3057	9020	15522
96	160	256	93512	4956	8539	4439	2247	8725	15895
96	161	257	98092	3491	8554	4325	3737	8448	16271
96	162	258	101487	4676	8905	4232	2922	8167	16629

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
96	163	259	106330	3228	8914	4119	4388	7904	16990
96	164	260	109989	4411	9256	4026	3567	7639	17334
96	165	261	115079	2982	9259	3911	5009	7393	17681
96	166	262	118985	4164	9594	3814	4179	7146	18010
96	167	263	124301	2755	9591	3693	5595	6920	18344
96	168	264	128433	3939	9918	3589	4756	6695	18661
96	169	265	133951	2553	9911	3458	6144	6492	18982
96	170	266	138281	3740	10230	3340	5294	6293	19287
96	171	267	143974	2379	10219	3193	6652	6119	19598
96	172	268	148471	3574	10532	3054	5787	5953	19894
96	173	269	154301	2240	10517	2882	7113	5814	20196
96	174	270	158926	3446	10825	2713	6230	5687	20485
96	175	271	164851	2145	10809	2506	7521	5592	20782
96	176	272	169555	3367	11113	2296	6617	5513	21068
96	177	273	175522	2104	11097	2041	7868	5471	21362
96	178	274	180245	3348	11400	1775	6937	5452	21648
96	179	275	186189	2127	11385	1457	8144	5475	21946
96	180	276	190860	3400	11689	1119	7184	5527	22238
96	181	277	196702	2229	11678	719	8342	5629	22544
96	182	278	201235	3538	11985	289	7344	5768	22847
96	183	279	206879	2426	11982	-213	8448	5965	23169
96	184	280	211169	3781	12297	-759	7408	6207	23492
97	126	223	60558		-1763				-1272
97	127	224	60365	8264	-1330		-7730		-801
97	128	225	58982	9454	-1290	11850	-8897	17718	-324
97	129	226	58684	8369	-845	11274	-7395	17823	174
97	130	227	57276	9479	-792	10771	-8468	17848	673
97	131	228	57004	8343	-339	10298	-6906	17823	1190
97	132	229	55684	9390	-277	9887	-7905	17734	1704
97	133	230	55538	8217	178	9496	-6299	17608	2231
97	134	231	54395	9214	245	9159	-7240	17431	2752
97	135	232	54451	8015	702	8834	-5605	17229	3283
97	136	233	53550	8972	773	8555	-6501	16987	3805
97	137	234	53864	7756	1227	8283	-4850	16729	4335
97	138	235	53253	8683	1299	8050	-5712	16439	4854
97	139	236	53865	7458	1750	7817	-4053	16142	5380
97	140	237	53575	8361	1821	7620	-4891	15820	5893
97	141	238	54511	7134	2267	7419	-3232	15496	6411
97	142	239	54563	8019	2336	7248	-4052	15154	6915
97	143	240	55840	6794	2776	7070	-2399	14814	7424
97	144	241	56245	7666	2842	6919	-3208	14460	7917
97	145	242	57870	6446	3276	6758	-1566	14112	8414
97	146	243	58632	7308	3337	6622	-2366	13755	8897

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
97	147	244	60606	6097	3764	6474	-738	13406	9381
97	148	245	61726	6951	3821	6348	-1534	13049	9850
97	149	246	64045	5751	4240	6210	76	12703	10322
97	150	247	65517	6599	4292	6093	-717	12351	10778
97	151	248	68177	5411	4704	5962	876	12011	11235
97	152	249	69992	6255	4751	5850	82	11666	11677
97	153	250	72984	5079	5154	5725	1655	11335	12120
97	154	251	75135	5920	5196	5618	861	10999	12548
97	155	252	78449	4757	5591	5497	2414	10677	12976
97	156	253	80926	5595	5627	5394	1617	10352	13389
97	157	254	84550	4446	6013	5277	3149	10041	13804
97	158	255	87340	5282	6043	5177	2350	9728	14202
97	159	256	91264	4146	6422	5062	3860	9429	14601
97	160	257	94354	4981	6446	4964	3056	9128	14985
97	161	258	98564	3860	6816	4851	4544	8842	15370
97	162	259	101941	4694	6834	4753	3736	8555	15740
97	163	260	106422	3589	7196	4640	5201	8284	16110
97	164	261	110070	4424	7208	4541	4386	8013	16465
97	165	262	114806	3335	7561	4426	5827	7759	16821
97	166	263	118705	4172	7569	4323	5004	7507	17163
97	167	264	123676	3100	7913	4201	6419	7272	17505
97	168	265	127806	3941	7915	4090	5587	7042	17833
97	169	266	132987	2889	8252	3958	6974	6831	18163
97	170	267	137321	3737	8249	3834	6130	6627	18479
97	171	268	142683	2708	8579	3685	7487	6446	18798
97	172	269	147188	3566	8572	3539	6627	6275	19104
97	173	270	152695	2563	8895	3366	7951	6130	19413
97	174	271	157330	3436	8884	3190	7073	6000	19710
97	175	272	162938	2463	9202	2982	8360	5899	20012
97	176	273	167654	3355	9189	2766	7459	5818	20303
97	177	274	173307	2417	9503	2510	8705	5773	20600
97	178	275	178044	3334	9490	2239	7776	5752	20890
97	179	276	183676	2439	9801	1921	8976	5773	21186
97	180	277	188360	3387	9789	1578	8014	5827	21478
97	181	278	193890	2541	10101	1179	9162	5929	21779
97	182	279	198431	3530	10092	745	8161	6071	22078
97	183	280	203761	2741	10407	244	9251	6271	22389
97	184	281	208053	3779	10405	-303	8203	6520	22702
98	126	224	68095		-248				-2011
98	127	225	67880	8287	-225		-9982		-1556
98	128	226	66080	9870	191	12149	-11151	18157	-1098
98	129	227	65745	8406	228	11574	-9662	18277	-616
98	130	228	63910	9905	654	11082	-10736	18312	-137

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
98	131	229	63590	8392	703	10614	-9184	18298	363
98	132	230	61838	9823	1135	10217	-10182	18215	858
98	133	231	61635	8273	1191	9835	-8586	18096	1370
98	134	232	60057	9649	1627	9514	-9524	17923	1872
98	135	233	60052	8076	1688	9199	-7896	17726	2391
98	136	234	58715	9408	2124	8937	-8788	17484	2897
98	137	235	58965	7820	2188	8675	-7142	17229	3416
98	138	236	57919	9117	2622	8459	-7999	16938	3922
98	139	237	58466	7523	2687	8237	-6344	16641	4438
98	140	238	57744	8793	3119	8056	-7174	16317	4940
98	141	239	58616	7199	3184	7864	-5517	15992	5452
98	142	240	58240	8447	3612	7708	-6329	15646	5948
98	143	241	59453	6857	3675	7538	-4676	15305	6452
98	144	242	59436	8088	4098	7400	-5474	14946	6940
98	145	243	60999	6508	4159	7246	-3831	14597	7435
98	146	244	61344	7725	4576	7121	-4620	14233	7914
98	147	245	63260	6155	4634	6978	-2990	13881	8399
98	148	246	63968	7363	5046	6862	-3773	13518	8867
98	149	247	66234	5805	5100	6727	-2158	13168	9341
98	150	248	67301	7004	5504	6617	-2938	12810	9797
98	151	249	69910	5461	5555	6488	-1341	12466	10259
98	152	250	71328	6653	5953	6382	-2119	12115	10704
98	153	251	74274	5125	5999	6257	-540	11778	11153
98	154	252	76035	6310	6389	6155	-1319	11435	11585
98	155	253	79308	4798	6430	6032	239	11108	12021
98	156	254	81401	5978	6813	5933	-540	10776	12440
98	157	255	84990	4482	6849	5813	998	10460	12863
98	158	256	87404	5657	7224	5715	215	10139	13268
98	159	257	91297	4177	7256	5596	1734	9835	13678
98	160	258	94019	5348	7623	5499	947	9526	14069
98	161	259	98204	3886	7648	5382	2444	9235	14465
98	162	260	101221	5054	8008	5284	1653	8940	14843
98	163	261	105683	3609	8028	5166	3127	8663	15224
98	164	262	108979	4775	8379	5067	2330	8385	15588
98	165	263	113701	3349	8394	4946	3780	8125	15956
98	166	264	117257	4515	8737	4842	2975	7864	16306
98	167	265	122218	3109	8746	4714	4399	7624	16660
98	168	266	126013	4276	9081	4602	3585	7386	16997
98	169	267	131191	2893	9085	4464	4981	7170	17338
98	170	268	135196	4065	9413	4338	4154	6959	17663
98	171	269	140560	2707	9412	4184	5519	6773	17991
98	172	270	144744	3887	9733	4037	4677	6595	18305
98	173	271	150256	2558	9727	3857	6008	6446	18622
98	174	272	154577	3750	10041	3681	5146	6308	18926

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
98	175	273	160194	2454	10032	3468	6440	6204	19234
98	176	274	164602	3663	10341	3251	5553	6118	19530
98	177	275	170267	2405	10329	2991	6805	6069	19832
98	178	276	174700	3639	10633	2719	5889	6044	20123
98	179	277	180345	2425	10620	2397	7092	6065	20422
98	180	278	184727	3689	10921	2056	6140	6115	20711
98	181	279	190269	2528	10909	1655	7289	6218	21010
98	182	280	194509	3831	11210	1224	6295	6360	21303
98	183	281	199850	2731	11200	722	7383	6562	21607
98	184	282	203839	4081	11503	179	6338	6813	21908
99	126	225	77862		-2478				-2726
99	127	226	77232	8701	-2063		-8892		-2288
99	128	227	75407	9895	-2038	12424	-10076	18597	-1847
99	129	228	74647	8832	-1612	11856	-8613	18727	-1384
99	130	229	72774	9943	-1575	11367	-9701	18775	-920
99	131	230	72020	8825	-1141	10910	-8174	18769	-438
99	132	231	70221	9870	-1094	10520	-9185	18695	40
99	133	232	69581	8711	-656	10152	-7612	18581	535
99	134	233	67949	9703	-602	9839	-8561	18415	1024
99	135	234	67503	8516	-162	9540	-6955	18220	1525
99	136	235	66108	9466	-104	9288	-7857	17983	2019
99	137	236	65918	8261	336	9041	-6230	17728	2524
99	138	237	64810	9178	397	8835	-7095	17440	3020
99	139	238	64919	7963	836	8629	-5457	17142	3524
99	140	239	64134	8856	899	8456	-6294	16819	4018
99	141	240	64569	7636	1335	8279	-4653	16492	4520
99	142	241	64130	8510	1398	8130	-5469	16146	5010
99	143	242	64910	7291	1831	7974	-3831	15801	5507
99	144	243	64831	8151	1893	7842	-4632	15442	5992
99	145	244	65965	6936	2322	7700	-3002	15088	6482
99	146	245	66250	7785	2382	7580	-3793	14722	6959
99	147	246	67742	6579	2807	7447	-2174	14365	7441
99	148	247	68392	7420	2864	7335	-2957	14000	7911
99	149	248	70239	6224	3283	7208	-1352	13645	8383
99	150	249	71251	7059	3338	7100	-2131	13283	8843
99	151	250	73448	5874	3750	6978	-542	12933	9306
99	152	251	74815	6704	3802	6873	-1319	12578	9755
99	153	252	77355	5531	4208	6753	252	12235	10207
99	154	253	79068	6358	4256	6650	-523	11889	10645
99	155	254	81941	5197	4655	6532	1030	11556	11086
99	156	255	83991	6021	4698	6430	253	11219	11512
99	157	256	87188	4874	5090	6313	1788	10896	11940
99	158	257	89563	5696	5129	6212	1009	10570	12354



Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
99	159	258	93072	4562	5514	6096	2524	10258	12770
99	160	259	95760	5383	5548	5995	1742	9945	13171
99	161	260	99568	4263	5925	5878	3236	9646	13574
99	162	261	102556	5083	5954	5777	2451	9346	13962
99	163	262	106648	3978	6323	5659	3922	9061	14351
99	164	263	109920	4799	6347	5554	3131	8778	14727
99	165	264	114281	3710	6708	5433	4579	8509	15102
99	166	265	117819	4533	6726	5324	3781	8244	15464
99	167	266	122428	3462	7079	5197	5203	7995	15826
99	168	267	126209	4289	7092	5079	4396	7752	16174
99	169	268	131042	3238	7437	4940	5790	7528	16523
99	170	269	135040	4073	7445	4809	4970	7312	16858
99	171	270	140066	3044	7782	4654	6334	7118	17194
99	172	271	144247	3890	7785	4501	5497	6935	17518
99	173	272	149431	2888	8114	4322	6827	6778	17842
99	174	273	153754	3748	8112	4141	5970	6636	18153
99	175	274	159048	2777	8435	3928	7262	6525	18467
99	176	275	163462	3657	8428	3707	6380	6434	18769
99	177	276	168811	2722	8745	3447	7627	6380	19074
99	178	277	173253	3629	8736	3173	6715	6352	19369
99	179	278	178586	2737	9047	2853	7913	6366	19668
99	180	279	182980	3677	9036	2510	6963	6415	19958
99	181	280	188214	2837	9344	2112	8104	6514	20253
99	182	281	192466	3818	9331	1681	7109	6655	20542
99	183	282	197500	3037	9638	1185	8187	6856	20838
99	184	283	201501	4071	9627	644	7138	7108	21130
100	126	226	86124		-973				-3451
100	127	227	85484	8711	-963		-11109		-3026
100	128	228	83260	10295	-563	12740	-12292	19006	-2602
100	129	229	82476	8855	-540	12171	-10840	19150	-2153
100	130	230	80195	10352	-131	11690	-11926	19207	-1706
100	131	231	79407	8859	-97	11236	-10409	19211	-1239
100	132	232	77193	10285	317	10857	-11418	19144	-777
100	133	233	76510	8754	359	10495	-9853	19039	-296
100	134	234	74459	10122	778	10196	-10800	18876	175
100	135	235	73965	8565	827	9904	-9201	18687	664
100	136	236	72149	9887	1248	9666	-10099	18453	1143
100	137	237	71906	8314	1301	9429	-8479	18202	1637
100	138	238	70376	9600	1723	9236	-9338	17915	2120
100	139	239	70428	8019	1779	9038	-7706	17619	2615
100	140	240	69223	9276	2200	8879	-8536	17296	3099
100	141	241	69600	7694	2257	8708	-6899	16970	3593
100	142	242	68742	8929	2677	8573	-7707	16623	4075

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
100	143	243	69464	7349	2735	8422	-6071	16279	4567
100	144	244	68968	8567	3152	8302	-6864	15917	5046
100	145	245	70044	6995	3210	8165	-5234	15562	5533
100	146	246	69916	8199	3623	8055	-6015	15194	6006
100	147	247	71350	6637	3680	7926	-4395	14836	6487
100	148	248	71592	7829	4089	7822	-5168	14466	6954
100	149	249	73383	6280	4145	7697	-3561	14109	7428
100	150	250	73990	7463	4549	7597	-4328	13744	7888
100	151	251	76134	5927	4602	7475	-2736	13391	8353
100	152	252	77102	7103	5001	7376	-3500	13031	8804
100	153	253	79591	5581	5052	7256	-1924	12685	9260
100	154	254	80911	6751	5445	7157	-2686	12333	9701
100	155	255	83737	5245	5492	7038	-1128	11996	10148
100	156	256	85400	6408	5880	6939	-1890	11653	10578
100	157	257	88553	4918	5923	6820	-350	11326	11014
100	158	258	90548	6076	6304	6721	-1113	10994	11434
100	159	259	94017	4601	6343	6602	407	10678	11858
100	160	260	96331	5756	6717	6502	-357	10358	12266
100	161	261	100105	4298	6752	6382	1143	10054	12677
100	162	262	102726	5449	7118	6281	374	9748	13073
100	163	263	106789	4008	7148	6159	1853	9458	13472
100	164	264	109702	5158	7507	6055	1079	9166	13855
100	165	265	114037	3735	7532	5929	2535	8893	14241
100	166	266	117224	4884	7883	5820	1754	8620	14610
100	167	267	121813	3482	7903	5687	3184	8366	14983
100	168	268	125251	4633	8247	5569	2394	8115	15339
100	169	269	130070	3253	8261	5426	3797	7886	15698
100	170	270	133732	4408	8596	5294	2994	7661	16042
100	171	271	138750	3053	8605	5134	4366	7462	16388
100	172	272	142603	4217	8933	4982	3546	7271	16718
100	173	273	147783	2891	8936	4798	4885	7109	17051
100	174	274	151786	4068	9256	4617	4044	6959	17369
100	175	275	157082	2775	9255	4400	5343	6843	17690
100	176	276	161183	3970	9568	4180	4476	6746	17997
100	177	277	166537	2716	9562	3918	5731	6687	18307
100	178	278	170673	3935	9868	3645	4832	6652	18604
100	179	279	176017	2727	9858	3324	6036	6663	18906
100	180	280	180109	3978	10159	2984	5098	6706	19195
100	181	281	185357	2823	10146	2586	6243	6802	19490
100	182	282	189313	4115	10442	2161	5258	6938	19774
100	183	283	194362	3022	10427	1667	6337	7137	20065
100	184	284	198069	4364	10720	1134	5296	7386	20348
101	126	227	96594		-3180				-4153

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
101	127	228	95553	9111	-2779		-10014		-3743
101	128	229	93316	10308	-2766	13028	-11210	19420	-3330
101	129	230	92122	9265	-2356	12465	-9780	19573	-2897
101	130	231	89817	10376	-2332	11984	-10879	19642	-2464
101	131	232	88611	9276	-1915	11540	-9385	19652	-2013
101	132	233	86364	10319	-1881	11164	-10405	19595	-1564
101	133	234	85259	9175	-1460	10814	-8862	19494	-1100
101	134	235	83167	10163	-1419	10520	-9820	19339	-640
101	135	236	82248	8990	-994	10242	-8242	19153	-166
101	136	237	80385	9934	-947	10011	-9150	18924	301
101	137	238	79715	8741	-520	9786	-7549	18675	780
101	138	239	78134	9652	-469	9601	-8417	18393	1253
101	139	240	77759	8446	-42	9416	-6802	18098	1737
101	140	241	76499	9331	12	9263	-7640	17777	2212
101	141	242	76450	8120	439	9106	-6019	17451	2697
101	142	243	75535	8985	495	8976	-6834	17106	3172
101	143	244	75832	7774	920	8837	-5213	16760	3656
101	144	245	75278	8625	978	8722	-6010	16399	4130
101	145	246	75931	7418	1401	8595	-4395	16043	4611
101	146	247	75746	8256	1459	8489	-5179	15675	5082
101	147	248	76760	7056	1878	8370	-3572	15313	5559
101	148	249	76944	7887	1936	8268	-4347	14944	6026
101	149	250	78319	6696	2352	8152	-2751	14583	6498
101	150	251	78870	7520	2409	8053	-3519	14216	6958
101	151	252	80602	6339	2820	7938	-1937	13859	7423
101	152	253	81516	7158	2875	7839	-2701	13497	7877
101	153	254	83598	5989	3282	7724	-1133	13147	8334
101	154	255	84865	6803	3334	7625	-1895	12792	8780
101	155	256	87290	5646	3736	7510	-343	12450	9229
101	156	257	88903	6458	3785	7410	-1103	12104	9665
101	157	258	91661	5313	4181	7294	429	11772	10105
101	158	259	93609	6122	4227	7193	-330	11436	10531
101	159	260	96689	4991	4616	7076	1185	11114	10960
101	160	261	98962	5798	4658	6973	423	10790	11376
101	161	262	102352	4681	5041	6855	1919	10479	11793
101	162	263	104935	5487	5079	6750	1155	10168	12198
101	163	264	108622	4384	5455	6629	2631	9872	12603
101	164	265	111502	5191	5488	6521	1862	9575	12996
101	165	266	115470	4103	5856	6396	3315	9295	13389
101	166	267	118628	4912	5884	6283	2539	9016	13768
101	167	268	122857	3842	6245	6151	3968	8755	14148
101	168	269	126272	4656	6268	6028	3183	8498	14515
101	169	270	130738	3605	6620	5885	4585	8261	14881
101	170	271	134383	4426	6638	5748	3788	8031	15234

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
101	171	272	139056	3397	6982	5589	5159	7824	15587
101	172	273	142898	4229	6994	5433	4345	7627	15927
101	173	274	147741	3227	7330	5250	5682	7457	16267
101	174	275	151738	4074	7336	5065	4848	7302	16593
101	175	276	156706	3103	7665	4849	6145	7178	16920
101	176	277	160806	3971	7665	4627	5284	7075	17234
101	177	278	165840	3037	7986	4367	6536	7008	17548
101	178	279	169980	3931	7981	4093	5643	6968	17850
101	179	280	175011	3040	8294	3775	6843	6972	18153
101	180	281	179113	3969	8285	3435	5909	7010	18444
101	181	282	184054	3130	8591	3043	7050	7099	18737
101	182	283	188024	4101	8578	2619	6067	7231	19020
101	183	284	192772	3322	8878	2133	7140	7424	19306
101	184	285	196496	4347	8861	1604	6098	7670	19582
102	130	232	97997	10770	-891	12311	-13065	20048	-3224
102	131	233	96769	9298	-869	11868	-11578	20069	-2784
102	132	234	94122	10718	-469	11502	-12595	20017	-2351
102	133	235	92987	9206	-438	11155	-11060	19924	-1899
102	134	236	90491	10567	-34	10873	-12014	19774	-1453
102	135	237	89535	9027	2	10599	-10444	19595	-991
102	136	238	87264	10341	409	10380	-11347	19369	-537
102	137	239	86552	8784	452	10161	-9753	19125	-68
102	138	240	84562	10060	861	9988	-10616	18844	392
102	139	241	84140	8493	908	9809	-9007	18554	866
102	140	242	82470	9741	1318	9668	-9839	18234	1330
102	141	243	82370	8171	1369	9516	-8223	17912	1808
102	142	244	81046	9395	1778	9398	-9032	17566	2274
102	143	245	81289	7827	1831	9264	-7414	17223	2752
102	144	246	80326	9034	2240	9159	-8204	16861	3219
102	145	247	80925	7472	2295	9036	-6590	16506	3696
102	146	248	80332	8664	2702	8939	-7367	16136	4161
102	147	249	81291	7112	2757	8822	-5760	15776	4636
102	148	250	81070	8292	3162	8729	-6526	15404	5099
102	149	251	82390	6751	3218	8614	-4930	15043	5570
102	150	252	82539	7921	3619	8522	-5689	14673	6028
102	151	253	84217	6394	3674	8408	-4105	14315	6495
102	152	254	84731	7556	4073	8316	-4858	13950	6948
102	153	255	86760	6042	4126	8201	-3288	13598	7408
102	154	256	87634	7197	4520	8106	-4038	13240	7855
102	155	257	90007	5698	4571	7990	-2484	12895	8308
102	156	258	91231	6847	4961	7894	-3231	12545	8747
102	157	259	93939	5362	5010	7777	-1693	12210	9191
102	158	260	95504	6507	5394	7678	-2440	11869	9621

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
102	159	261	98538	5037	5440	7559	-920	11544	10057
102	160	262	100432	6177	5818	7459	-1667	11214	10477
102	161	263	103780	4723	5861	7337	-165	10900	10902
102	162	264	105991	5859	6232	7235	-915	10583	11312
102	163	265	109640	4422	6271	7110	566	10282	11726
102	164	266	112155	5556	6636	7003	-186	9979	12124
102	165	267	116088	4137	6670	6875	1273	9694	12526
102	166	268	118889	5271	7028	6762	513	9408	12913
102	167	269	123088	3871	7057	6626	1949	9142	13302
102	168	270	126153	5006	7408	6503	1181	8878	13676
102	169	271	130595	3629	7432	6356	2590	8636	14052
102	170	272	133897	4768	7774	6220	1810	8398	14412
102	171	273	138552	3416	7793	6057	3189	8185	14775
102	172	274	142059	4564	8127	5902	2392	7980	15122
102	173	275	146890	3240	8140	5715	3737	7804	15470
102	174	276	150560	4401	8466	5532	2919	7641	15803
102	175	277	155521	3110	8473	5313	4225	7511	16138
102	176	278	159303	4289	8791	5092	3380	7399	16457
102	177	279	164337	3037	8791	4830	4641	7326	16778
102	178	280	168167	4241	9102	4559	3762	7278	17083
102	179	281	173203	3035	9096	4241	4970	7276	17390
102	180	282	177004	4271	9398	3906	4050	7306	17683
102	181	283	181956	3118	9386	3514	5198	7389	17978
102	182	284	185632	4395	9680	3098	4228	7514	18258
102	183	285	190397	3306	9663	2615	5305	7701	18542
102	184	286	193834	4634	9950	2096	4275	7940	18812
103	132	235	104048	10741	-2636	11806	-11568	20442	-3106
103	133	236	102505	9613	-2229	11469	-10053	20355	-2668
103	134	237	99979	10597	-2198	11190	-11017	20211	-2233
103	135	238	98612	9438	-1788	10927	-9467	20036	-1785
103	136	239	96305	10378	-1751	10712	-10379	19816	-1342
103	137	240	95179	9197	-1338	10505	-8804	19575	-885
103	138	241	93147	10102	-1296	10337	-9677	19300	-435
103	139	242	92310	8908	-881	10169	-8086	19011	27
103	140	243	90594	9787	-834	10034	-8926	18696	483
103	141	244	90078	8587	-418	9893	-7327	18374	950
103	142	245	88704	9445	-369	9779	-8143	18032	1409
103	143	246	88531	8244	47	9656	-6542	17689	1878
103	144	247	87516	9086	99	9555	-7338	17330	2339
103	145	248	87699	7887	514	9442	-5739	16974	2809
103	146	249	87052	8718	569	9349	-6520	16606	3271
103	147	250	87597	7526	983	9240	-4928	16245	3741
103	148	251	87321	8347	1038	9150	-5697	15873	4201

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
103	149	252	88229	7163	1450	9043	-4114	15511	4668
103	150	253	88322	7977	1506	8953	-4875	15141	5126
103	151	254	89590	6803	1915	8846	-3303	14781	5590
103	152	255	90049	7612	1971	8754	-4058	14415	6044
103	153	256	91673	6448	2376	8645	-2498	14060	6503
103	154	257	92491	7252	2431	8550	-3249	13700	6952
103	155	258	94463	6100	2833	8439	-1703	13352	7405
103	156	259	95633	6900	2886	8342	-2451	13000	7847
103	157	260	97944	5760	3284	8229	-921	12660	8294
103	158	261	99458	6557	3334	8129	-1666	12317	8729
103	159	262	102099	5429	3727	8013	-153	11987	9167
103	160	263	103945	6225	3775	7911	-898	11655	9594
103	161	264	106907	5109	4161	7792	597	11335	10023
103	162	265	109073	5904	4207	7686	-148	11014	10439
103	163	266	112342	4802	4587	7564	1328	10707	10858
103	164	267	114815	5597	4628	7455	578	10400	11264
103	165	268	118375	4511	5002	7327	2034	10109	11672
103	166	269	121139	5307	5039	7211	1279	9819	12067
103	167	270	124972	4238	5405	7076	2712	9546	12463
103	168	271	128004	5038	5437	6950	1949	9277	12846
103	169	272	132087	3988	5796	6804	3356	9027	13228
103	170	273	135363	4795	5823	6665	2581	8784	13598
103	171	274	139666	3767	6174	6503	3959	8563	13967
103	172	275	143153	4585	6195	6344	3168	8352	14323
103	173	276	147641	3583	6538	6159	4512	8168	14678
103	174	277	151296	4415	6553	5973	3701	7999	15020
103	175	278	155923	3444	6887	5756	5005	7860	15360
103	176	279	159696	4297	6896	5532	4167	7742	15687
103	177	280	164405	3362	7221	5273	5426	7660	16013
103	178	281	168233	4242	7223	5002	4554	7605	16325
103	179	282	172953	3351	7539	4687	5761	7594	16635
103	180	283	176758	4265	7534	4353	4847	7617	16932
103	181	284	181404	3425	7841	3968	5992	7691	17228
103	182	285	185092	4383	7829	3554	5027	7809	17509
103	183	286	189559	3603	8126	3080	6102	7987	17790
103	184	287	193016	4614	8107	2567	5075	8218	18057
104	134	238	108079	10988	-811	11531	-13168	20622	-3010
104	135	239	106685	9465	-783	11272	-11624	20454	-2571
104	136	240	103984	10772	-389	11067	-12533	20238	-2141
104	137	241	102824	9230	-356	10864	-10964	20002	-1694
104	138	242	100396	10499	39	10707	-11832	19729	-1256
104	139	243	99520	8947	78	10543	-10247	19446	-802
104	140	244	97406	10185	476	10418	-11083	19133	-357

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
104	141	245	96847	8629	519	10282	-9489	18815	100
104	142	246	95073	9845	919	10178	-10299	18475	550
104	143	247	94854	8290	965	10059	-8702	18135	1012
104	144	248	93439	9486	1366	9968	-9492	17776	1465
104	145	249	93573	7937	1415	9858	-7897	17424	1930
104	146	250	92525	9118	1815	9773	-8672	17056	2385
104	147	251	93019	7577	1867	9668	-7082	16696	2850
104	148	252	92343	8746	2266	9585	-7844	16324	3304
104	149	253	93198	7216	2319	9481	-6263	15963	3769
104	150	254	92894	8375	2717	9398	-7016	15592	4223
104	151	255	94108	6857	2771	9292	-5444	15232	4686
104	152	256	94171	8007	3166	9207	-6190	14864	5137
104	153	257	95741	6502	3220	9098	-4630	14509	5597
104	154	258	96166	7645	3613	9010	-5371	14147	6045
104	155	259	98084	6153	3667	8898	-3824	13798	6500
104	156	260	98865	7290	4056	8806	-4561	13443	6943
104	157	261	101125	5812	4108	8692	-3028	13102	7392
104	158	262	102252	6943	4494	8596	-3763	12755	7829
104	159	263	104844	5480	4544	8479	-2246	12423	8272
104	160	264	106309	6605	4925	8380	-2979	12086	8700
104	161	265	109222	5158	4973	8259	-1479	11764	9135
104	162	266	111013	6279	5348	8156	-2212	11438	9555
104	163	267	114237	4848	5393	8032	-730	11128	9981
104	164	268	116340	5967	5763	7924	-1466	10815	10392
104	165	269	119859	4552	5805	7794	-4	10520	10807
104	166	270	122259	5671	6168	7679	-745	10224	11207
104	167	271	126054	4275	6206	7540	694	9947	11611
104	168	272	128730	5395	6562	7416	-53	9671	12000
104	169	273	132781	4020	6595	7267	1360	9416	12392
104	170	274	135707	5145	6944	7129	601	9166	12768
104	171	275	139984	3794	6971	6963	1987	8939	13146
104	172	276	143128	4927	7313	6805	1212	8721	13509
104	173	277	147595	3604	7334	6617	2564	8531	13873
104	174	278	150917	4749	7667	6432	1769	8353	14221
104	175	279	155529	3459	7683	6213	3083	8208	14570
104	176	280	158978	4622	8007	5992	2261	8081	14903
104	177	281	163678	3370	8015	5731	3529	7993	15237
104	178	282	167192	4557	8330	5463	2674	7928	15553
104	179	283	171911	3352	8331	5148	3889	7909	15870
104	180	284	175411	4570	8636	4818	2992	7923	16170
104	181	285	180064	3418	8629	4435	4146	7989	16470
104	182	286	183457	4678	8923	4028	3196	8096	16753
104	183	287	187941	3587	8907	3559	4278	8265	17034
104	184	288	191114	4898	9191	3056	3266	8486	17298

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
105	136	241	113789	10799	-2516	11384	-11548	20663	-2905
105	137	242	112229	9631	-2115	11191	-9998	20430	-2471
105	138	243	109768	10532	-2082	11037	-10874	20163	-2042
105	139	244	108489	9350	-1679	10885	-9308	19882	-1600
105	140	245	106336	10223	-1641	10764	-10152	19573	-1164
105	141	246	105373	9034	-1236	10637	-8576	19258	-717
105	142	247	103557	9887	-1194	10538	-9394	18922	-275
105	143	248	102932	8696	-788	10429	-7814	18583	177
105	144	249	101470	9532	-742	10341	-8611	18229	623
105	145	250	101198	8344	-336	10241	-7032	17876	1079
105	146	251	100101	9167	-286	10160	-7813	17511	1528
105	147	252	100188	7984	119	10063	-6238	17152	1986
105	148	253	99461	8798	171	9984	-7006	16782	2437
105	149	254	99910	7622	577	9887	-5438	16420	2896
105	150	255	99552	8428	630	9806	-6196	16051	3347
105	151	256	100362	7261	1034	9708	-4637	15690	3806
105	152	257	100371	8062	1089	9624	-5386	15323	4256
105	153	258	101538	6904	1491	9522	-3839	14966	4712
105	154	259	101909	7700	1546	9434	-4581	14605	5160
105	155	260	103427	6553	1946	9329	-3046	14253	5613
105	156	261	104153	7344	2000	9237	-3784	13898	6057
105	157	262	106015	6209	2398	9128	-2261	13553	6506
105	158	263	107090	6997	2451	9031	-2995	13206	6946
105	159	264	109288	5872	2844	8918	-1487	12870	7389
105	160	265	110701	6658	2896	8818	-2220	12531	7822
105	161	266	113226	5546	3285	8701	-727	12204	8258
105	162	267	114967	6330	3335	8597	-1459	11876	8684
105	163	268	117807	5231	3718	8475	16	11561	9112
105	164	269	119863	6014	3766	8365	-716	11246	9529
105	165	270	123004	4930	4144	8237	739	10945	9949
105	166	271	125360	5715	4188	8119	2	10646	10356
105	167	272	128784	4647	4559	7983	1438	10362	10765
105	168	273	131420	5435	4599	7856	694	10082	11162
105	169	274	135105	4385	4964	7708	2105	9821	11559
105	170	275	137996	5180	4999	7567	1351	9566	11944
105	171	276	141915	4152	5357	7403	2734	9332	12329
105	172	277	145030	4956	5387	7242	1966	9109	12700
105	173	278	149147	3954	5736	7055	3317	8910	13071
105	174	279	152445	4773	5760	6867	2528	8727	13428
105	175	280	156716	3800	6101	6650	3841	8573	13784
105	176	281	160148	4639	6118	6427	3026	8439	14126
105	177	282	164517	3702	6450	6169	4294	8341	14465
105	178	283	168021	4567	6459	5899	3446	8269	14790



Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
105	179	284	172419	3673	6780	5589	4662	8240	15112
105	180	285	175918	4572	6782	5259	3772	8245	15418
105	181	286	180260	3728	7092	4882	4926	8301	15721
105	182	287	183662	4669	7084	4478	3984	8398	16008
105	183	288	187847	3886	7382	4018	5067	8555	16290
105	184	289	191038	4880	7364	3521	4061	8766	16555
106	138	244	117797	10916	-740	11388	-12987	20572	-2822
106	139	245	116489	9379	-710	11239	-11426	20296	-2390
106	140	246	113949	10610	-323	11127	-12266	19990	-1965
106	141	247	112951	9069	-289	11005	-10695	19680	-1526
106	142	248	110746	10275	99	10915	-11509	19345	-1095
106	143	249	110082	8735	138	10810	-9934	19011	-650
106	144	250	108230	9923	529	10732	-10727	18658	-213
106	145	251	107915	8386	571	10635	-9152	18310	235
106	146	252	106427	9559	963	10563	-9928	17946	676
106	147	253	106468	8030	1009	10470	-8357	17589	1128
106	148	254	105349	9190	1401	10398	-9119	17220	1572
106	149	255	105749	7671	1450	10305	-7555	16861	2027
106	150	256	105000	8820	1841	10231	-8306	16491	2471
106	151	257	105758	7312	1892	10135	-6749	16133	2927
106	152	258	105377	8452	2283	10058	-7492	15765	3372
106	153	259	106491	6957	2335	9958	-5945	15410	3827
106	154	260	106473	8089	2725	9876	-6680	15046	4271
106	155	261	107938	6606	2778	9772	-5145	14695	4724
106	156	262	108277	7732	3165	9685	-5874	14338	5166
106	157	263	110086	6262	3218	9576	-4351	13994	5616
106	158	264	110776	7381	3603	9485	-5076	13643	6054
106	159	265	112921	5925	3655	9371	-3566	13307	6500
106	160	266	113953	7039	4036	9275	-4288	12965	6933
106	161	267	116427	5598	4088	9158	-2793	12637	7373
106	162	268	117790	6707	4465	9056	-3514	12305	7800
106	163	269	120580	5281	4515	8933	-2034	11988	8234
106	164	270	122264	6387	4888	8825	-2756	11669	8654
106	165	271	125357	4978	4935	8695	-1294	11365	9079
106	166	272	127346	6082	5303	8580	-2019	11061	9491
106	167	273	130725	4691	5347	8441	-578	10774	9906
106	168	274	133000	5797	5709	8315	-1308	10488	10308
106	169	275	136645	4426	5749	8165	109	10223	10713
106	170	276	139180	5535	6104	8025	-630	9961	11104
106	171	277	143064	4188	6140	7857	760	9723	11498
106	172	278	145830	5304	6488	7698	7	9493	11875
106	173	279	149917	3984	6519	7508	1366	9289	12256
106	174	280	152875	5113	6859	7321	594	9097	12620

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
106	175	281	157121	3824	6883	7101	1915	8937	12985
106	176	282	160222	4970	7214	6880	1118	8795	13333
106	177	283	164574	3719	7232	6620	2395	8690	13682
106	178	284	167756	4888	7553	6353	1564	8608	14013
106	179	285	172145	3682	7562	6042	2790	8571	14343
106	180	286	175334	4882	7873	5717	1918	8565	14655
106	181	287	179677	3727	7872	5341	3082	8610	14964
106	182	288	182780	4968	8170	4944	2158	8696	15254
106	183	289	186977	3874	8159	4487	3251	8843	15541
106	184	290	189883	5164	8444	4001	2263	9039	15808
107	140	247	123647	10639	-2408	11454	-11318	20410	-2732
107	141	248	122256	9462	-2015	11342	-9765	20101	-2305
107	142	249	120017	10310	-1981	11255	-10587	19772	-1882
107	143	250	118958	9130	-1586	11160	-9030	19440	-1447
107	144	251	117068	9961	-1548	11085	-9831	19091	-1019
107	145	252	116355	8783	-1151	10998	-8273	18744	-579
107	146	253	114825	9601	-1109	10930	-9056	18384	-146
107	147	254	114468	8428	-711	10845	-7501	18029	297
107	148	255	113304	9235	-666	10777	-8270	17664	735
107	149	256	113306	8069	-268	10692	-6721	17305	1181
107	150	257	112508	8869	-219	10622	-7478	16938	1622
107	151	258	112869	7710	178	10534	-5936	16579	2071
107	152	259	112436	8503	229	10459	-6683	16214	2512
107	153	260	113153	7354	626	10366	-5150	15858	2962
107	154	261	113083	8141	678	10286	-5889	15496	3404
107	155	262	114151	7002	1075	10188	-4366	15144	3853
107	156	263	114437	7785	1128	10103	-5098	14788	4294
107	157	264	115852	6656	1522	10000	-3586	14442	4741
107	158	265	116488	7435	1576	9909	-4313	14091	5180
107	159	266	118242	6317	1968	9801	-2814	13752	5624
107	160	267	119220	7093	2022	9705	-3537	13410	6059
107	161	268	121305	5986	2410	9591	-2050	13079	6499
107	162	269	122615	6760	2464	9489	-2771	12747	6929
107	163	270	125020	5666	2849	9369	-1300	12426	7364
107	164	271	126652	6439	2900	9259	-2020	12105	7789
107	165	272	129365	5358	3281	9133	-565	11798	8216
107	166	273	131304	6132	3330	9015	-1288	11491	8633
107	167	274	134308	5067	3706	8879	147	11199	9053
107	168	275	136535	5843	3753	8750	-579	10910	9462
107	169	276	139810	4796	4123	8601	834	10640	9872
107	170	277	142303	5578	4166	8458	99	10375	10271
107	171	278	145823	4551	4529	8292	1486	10130	10670
107	172	279	148550	5343	4568	8129	739	9895	11057

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
107	173	280	152281	4341	4925	7940	2096	9684	11444
107	174	281	155206	5146	4958	7750	1330	9487	11817
107	175	282	159104	4172	5306	7532	2651	9319	12189
107	176	283	162178	4997	5332	7308	1861	9170	12547
107	177	284	166191	4058	5671	7050	3139	9055	12903
107	178	285	169355	4908	5690	6781	2316	8966	13244
107	179	286	173415	4010	6018	6473	3543	8918	13581
107	180	287	176594	4892	6028	6148	2680	8902	13901
107	181	288	180622	4043	6344	5777	3846	8936	14216
107	182	289	183725	4967	6343	5382	2932	9011	14514
107	183	290	187620	4176	6645	4934	4027	9144	14805
107	184	291	190540	5151	6632	4453	3049	9328	15076
108	142	250	127988	10687	-682	11614	-12662	20175	-2663
108	143	251	126899	9160	-652	11522	-11111	19848	-2238
108	144	252	124629	10340	-272	11457	-11908	19501	-1820
108	145	253	123882	8818	-237	11374	-10356	19159	-1389
108	146	254	121970	9982	143	11315	-11135	18801	-965
108	147	255	121574	8467	182	11234	-9585	18450	-528
108	148	256	120027	9618	565	11175	-10349	18085	-100
108	149	257	119986	8112	608	11093	-8804	17730	340
108	150	258	118805	9252	991	11031	-9557	17364	772
108	151	259	119120	7756	1037	10946	-8018	17009	1216
108	152	260	118304	8887	1421	10879	-8760	16644	1651
108	153	261	118972	7402	1470	10789	-7230	16290	2096
108	154	262	118518	8525	1854	10716	-7963	15928	2532
108	155	263	119536	7053	1904	10620	-6442	15579	2979
108	156	264	119439	8168	2287	10541	-7167	15221	3416
108	157	265	120802	6708	2339	10439	-5656	14876	3862
108	158	266	121056	7816	2720	10354	-6376	14525	4297
108	159	267	122757	6370	2773	10246	-4876	14187	4741
108	160	268	123356	7473	3153	10154	-5591	13843	5175
108	161	269	125387	6039	3206	10040	-4104	13512	5617
108	162	270	126321	7137	3583	9942	-4815	13177	6047
108	163	271	128673	5719	3636	9821	-3342	12856	6485
108	164	272	129931	6813	4010	9715	-4051	12532	6911
108	165	273	132592	5410	4062	9586	-2594	12223	7343
108	166	274	134160	6502	4432	9471	-3304	11913	7763
108	167	275	137115	5116	4482	9332	-1865	11619	8188
108	168	276	138976	6209	4848	9205	-2579	11326	8601
108	169	277	142204	4843	4895	9053	-1160	11053	9019
108	170	278	144336	5939	5256	8911	-1882	10783	9422
108	171	279	147811	4595	5300	8741	-488	10535	9830
108	172	280	150184	5698	5655	8579	-1221	10293	10223

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
108	173	281	153875	4380	5694	8386	143	10078	10619
108	174	282	156453	5493	6041	8197	-606	9874	10999
108	175	283	160317	4206	6075	7975	723	9700	11382
108	176	284	163052	5336	6415	7752	-50	9543	11747
108	177	285	167038	4085	6442	7491	1237	9421	12113
108	178	286	169872	5237	6771	7224	432	9323	12462
108	179	287	173914	4028	6790	6915	1670	9266	12809
108	180	288	176775	5210	7108	6593	825	9239	13136
108	181	289	180793	4052	7117	6223	2003	9263	13461
108	182	290	183593	5272	7421	5833	1108	9324	13765
108	183	291	187491	4173	7418	5388	2216	9445	14063
108	184	292	190122	5440	7707	4916	1258	9613	14339
109	144	253	134238	10370	-2319	11796	-10997	19914	-2592
109	145	254	133105	9203	-1934	11722	-9463	19574	-2172
109	146	255	131160	10016	-1900	11667	-10250	19220	-1756
109	147	256	130377	8854	-1513	11596	-8717	18871	-1330
109	148	257	128791	9657	-1475	11541	-9489	18511	-909
109	149	258	128362	8500	-1086	11468	-7961	18157	-478
109	150	259	127139	9294	-1044	11409	-8720	17795	-52
109	151	260	127064	8145	-655	11333	-7197	17440	382
109	152	261	126202	8932	-609	11269	-7945	17078	811
109	153	262	126481	7792	-219	11187	-6429	16725	1250
109	154	263	125978	8574	-171	11116	-7168	16367	1682
109	155	264	126606	7442	218	11028	-5661	16017	2122
109	156	265	126458	8219	269	10950	-6391	15662	2556
109	157	266	127432	7097	658	10855	-4893	15316	2997
109	158	267	127634	7869	711	10771	-5616	14967	3431
109	159	268	128947	6758	1099	10669	-4128	14628	3873
109	160	269	129491	7527	1153	10578	-4845	14285	4306
109	161	270	131136	6426	1539	10469	-3368	13953	4746
109	162	271	132015	7192	1594	10370	-4081	13618	5178
109	163	272	133983	6103	1978	10253	-2617	13295	5615
109	164	273	135186	6868	2033	10145	-3327	12971	6044
109	165	274	137465	5792	2415	10019	-1877	12660	6477
109	166	275	138980	6556	2469	9902	-2587	12348	6901
109	167	276	141555	5495	2848	9765	-1154	12052	7330
109	168	277	143364	6262	2900	9635	-1866	11758	7748
109	169	278	146218	5217	3274	9485	-452	11480	8170
109	170	279	148299	5989	3325	9338	-1171	11207	8581
109	171	280	151406	4965	3694	9170	219	10954	8994
109	172	281	153732	5745	3741	9003	-509	10710	9396
109	173	282	157059	4743	4104	8811	853	10488	9799
109	174	283	159594	5536	4147	8618	108	10280	10189

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
109	175	284	163103	4562	4503	8397	1437	10099	10579
109	176	285	165801	5373	4540	8170	671	9936	10955
109	177	286	169439	4432	4887	7910	1959	9806	11330
109	178	287	172244	5266	4916	7640	1163	9699	11688
109	179	288	175949	4365	5253	7333	2403	9632	12044
109	180	289	178789	5231	5274	7010	1568	9596	12382
109	181	290	182484	4376	5598	6643	2750	9607	12715
109	182	291	185274	5281	5607	6255	1865	9657	13028
109	183	292	188864	4482	5916	5817	2978	9763	13334
109	184	293	191500	5435	5910	5349	2031	9917	13618
110	146	256	139095	10386	-645	12040	-12293	19616	-2546
110	147	257	138281	8885	-614	11974	-10766	19271	-2128
110	148	258	136323	10029	-242	11927	-11535	18914	-1718
110	149	259	135859	8535	-207	11859	-10012	18564	-1294
110	150	260	134262	9668	166	11809	-10767	18204	-878
110	151	261	134148	8184	205	11736	-9249	17853	-450
110	152	262	132911	9308	580	11680	-9993	17493	-29
110	153	263	133146	7835	623	11601	-8482	17144	403
110	154	264	132268	8950	999	11539	-9216	16785	828
110	155	265	132850	7489	1045	11452	-7712	16439	1263
110	156	266	132325	8595	1422	11382	-8437	16084	1691
110	157	267	133250	7146	1471	11289	-6941	15742	2129
110	158	268	133075	8246	1847	11211	-7658	15393	2558
110	159	269	134337	6809	1899	11110	-6172	15056	2998
110	160	270	134505	7903	2275	11023	-6882	14713	3428
110	161	271	136096	6479	2328	10914	-5406	14382	3868
110	162	272	136600	7567	2703	10819	-6111	14047	4298
110	163	273	138513	6157	2758	10701	-4646	13725	4737
110	164	274	139343	7242	3132	10597	-5348	13399	5165
110	165	275	141567	5846	3186	10469	-3896	13088	5602
110	166	276	142710	6928	3558	10354	-4596	12775	6028
110	167	277	145231	5550	3613	10214	-3160	12478	6461
110	168	278	146671	6631	3982	10085	-3862	12181	6883
110	169	279	149471	5271	4036	9931	-2444	11903	7311
110	170	280	151186	6355	4401	9785	-3150	11627	7727
110	171	281	154241	5016	4453	9612	-1754	11372	8147
110	172	282	156206	6106	4814	9445	-2469	11122	8555
110	173	283	159485	4792	4862	9249	-1100	10898	8967
110	174	284	161665	5891	5217	9055	-1829	10683	9365
110	175	285	165129	4607	5262	8829	-492	10498	9765
110	176	286	167479	5721	5610	8601	-1242	10328	10150
110	177	287	171080	4470	5648	8338	55	10191	10535
110	178	288	173546	5605	5986	8068	-722	10076	10903

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
110	179	289	177221	4395	6017	7758	528	10001	11270
110	180	290	179734	5558	6344	7437	-287	9954	11618
110	181	291	183409	4396	6364	7070	906	9954	11962
110	182	292	185886	5594	6677	6685	42	9991	12284
110	183	293	189468	4488	6684	6249	1169	10083	12600
110	184	294	191808	5731	6981	5790	244	10220	12891
111	148	259	145871	10058	-2258	12286	-10664	19319	-2501
111	149	260	145029	8913	-1881	12227	-9158	18971	-2089
111	150	261	143398	9702	-1847	12181	-9922	18615	-1681
111	151	262	142905	8564	-1467	12117	-8420	18267	-1262
111	152	263	141629	9347	-1429	12065	-9172	17911	-848
111	153	264	141484	8216	-1048	11995	-7676	17563	-425
111	154	265	140562	8993	-1005	11934	-8417	17209	-6
111	155	266	140763	7870	-623	11856	-6927	16863	421
111	156	267	140192	8642	-577	11789	-7658	16513	844
111	157	268	140734	7529	-194	11702	-6176	16171	1276
111	158	269	140509	8296	-145	11625	-6899	15825	1702
111	159	270	141387	7192	238	11530	-5425	15489	2137
111	160	271	141503	7955	290	11444	-6139	15148	2566
111	161	272	142712	6862	673	11339	-4675	14818	3002
111	162	273	143160	7622	728	11244	-5383	14485	3432
111	163	274	144691	6540	1111	11130	-3928	14163	3869
111	164	275	145464	7298	1167	11024	-4632	13838	4299
111	165	276	147307	6228	1549	10899	-3189	13527	4736
111	166	277	148392	6986	1606	10781	-3890	13215	5165
111	167	278	150533	5930	1987	10642	-2461	12916	5600
111	168	279	151915	6689	2044	10510	-3162	12619	6027
111	169	280	154337	5649	2422	10356	-1750	12338	6458
111	170	281	155996	6412	2479	10206	-2454	12061	6881
111	171	282	158676	5391	2854	10033	-1063	11803	7307
111	172	283	160586	6161	2909	9861	-1774	11552	7724
111	173	284	163495	5162	3279	9664	-408	11323	8142
111	174	285	165622	5944	3332	9465	-1132	11106	8550
111	175	286	168722	4971	3696	9237	203	10915	8958
111	176	287	171024	5768	3744	9005	-540	10740	9354
111	177	288	174269	4827	4100	8740	758	10596	9748
111	178	289	176693	5647	4142	8467	-11	10474	10128
111	179	290	180022	4742	4488	8157	1242	10389	10505
111	180	291	182502	5590	4520	7833	436	10333	10865
111	181	292	185843	4730	4855	7468	1634	10321	11219
111	182	293	188299	5615	4875	7084	782	10345	11553
111	183	294	191563	4807	5193	6653	1914	10422	11878
111	184	295	193897	5737	5199	6197	1003	10544	12180

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
112	150	262	151325	10065	-638	12577	-11939	19004	-2485
112	151	263	150801	8595	-607	12517	-10443	18661	-2075
112	152	264	149160	9712	-242	12473	-11191	18307	-1671
112	153	265	148979	8252	-206	12406	-9701	17964	-1254
112	154	266	147691	9359	160	12354	-10438	17612	-845
112	155	267	147851	7911	201	12279	-8954	17271	-422
112	156	268	146911	9011	570	12218	-9680	16922	-7
112	157	269	147408	7574	614	12133	-8202	16585	420
112	158	270	146813	8666	985	12062	-8920	16240	840
112	159	271	147643	7241	1033	11967	-7449	15908	1271
112	160	272	147387	8327	1405	11886	-8158	15568	1695
112	161	273	148544	6914	1456	11782	-6695	15241	2130
112	162	274	148620	7994	1829	11690	-7397	14909	2557
112	163	275	150096	6594	1883	11575	-5943	14589	2995
112	164	276	150496	7671	2256	11471	-6639	14266	3424
112	165	277	152282	6285	2313	11343	-5197	13956	3863
112	166	278	152995	7358	2686	11227	-5889	13644	4292
112	167	279	155077	5988	2744	11085	-4459	13347	4731
112	168	280	156088	7061	3116	10952	-5149	13049	5161
112	169	281	158450	5708	3175	10794	-3735	12769	5598
112	170	282	159739	6782	3545	10643	-4428	12490	6025
112	171	283	162360	5450	3604	10464	-3032	12232	6458
112	172	284	163903	6528	3971	10291	-3731	11978	6881
112	173	285	166754	5220	4029	10088	-2359	11748	7308
112	174	286	168519	6307	4392	9887	-3069	11527	7724
112	175	287	171564	5025	4446	9654	-1725	11332	8143
112	176	288	173510	6125	4803	9419	-2453	11151	8547
112	177	289	176704	4877	4853	9149	-1145	11002	8953
112	178	290	178780	5995	5202	8875	-1898	10872	9344
112	179	291	182066	4785	5244	8560	-633	10780	9733
112	180	292	184208	5929	5582	8237	-1420	10714	10103
112	181	293	187516	4763	5615	7870	-208	10692	10470
112	182	294	189648	5939	5939	7489	-1040	10702	10815
112	183	295	192893	4826	5959	7059	107	10765	11152
112	184	296	194920	6044	6265	6609	-781	10870	11465
113	152	265	158681	9742	-2231	12858	-10363	18706	-2473
113	153	266	158129	8622	-1860	12799	-8889	18365	-2067
113	154	267	156805	9395	-1825	12750	-9634	18018	-1664
113	155	268	156592	8284	-1451	12682	-8165	17680	-1250
113	156	269	155611	9052	-1411	12623	-8898	17336	-841
113	157	270	155733	7949	-1035	12545	-7435	17001	-421
113	158	271	155092	8712	-990	12475	-8159	16661	-5

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
113	159	272	155545	7618	-613	12386	-6701	16330	420
113	160	273	155239	8377	-563	12305	-7415	15995	841
113	161	274	156017	7293	-184	12205	-5965	15670	1272
113	162	275	156040	8048	-131	12112	-6671	15341	1698
113	163	276	157136	6975	249	11999	-5229	15023	2133
113	164	277	157479	7728	306	11893	-5928	14703	2562
113	165	278	158884	6666	687	11767	-4495	14394	3000
113	166	279	159536	7418	747	11647	-5189	14085	3433
113	167	280	161237	6370	1128	11505	-3768	13789	3873
113	168	281	162186	7123	1190	11368	-4459	13493	4307
113	169	282	164168	6089	1571	11209	-3052	13212	4747
113	170	283	165393	6845	1635	11053	-3744	12935	5180
113	171	284	167635	5829	2014	10872	-2354	12675	5619
113	172	285	169114	6592	2078	10693	-3050	12422	6049
113	173	286	171588	5596	2455	10487	-1681	12189	6484
113	174	287	173290	6369	2517	10279	-2387	11966	6909
113	175	288	175963	5398	2889	10043	-1046	11767	7336
113	176	289	177850	6185	2949	9802	-1767	11583	7752
113	177	290	180678	5243	3315	9530	-459	11428	8168
113	178	291	182699	6049	3369	9250	-1204	11292	8571
113	179	292	185629	5142	3726	8935	62	11191	8971
113	180	293	187725	5974	3771	8607	-714	11117	9354
113	181	294	190688	5107	4116	8241	501	11082	9732
113	182	295	192786	5973	4151	7858	-317	11081	10090
113	183	296	195701	5155	4480	7433	836	11129	10439
113	184	297	197710	6062	4498	6986	-37	11218	10764
114	154	268	164757	9753	-663	13171	-11629	18404	-2488
114	155	269	164510	8318	-629	13105	-10166	18071	-2081
114	156	270	163169	9412	-268	13052	-10896	17730	-1679
114	157	271	163251	7988	-229	12975	-9437	17401	-1265
114	158	272	162247	9075	134	12911	-10157	17064	-856
114	159	273	162655	7663	178	12822	-8704	16738	-434
114	160	274	161983	8743	545	12745	-9413	16406	-18
114	161	275	162712	7342	594	12644	-7966	16086	409
114	162	276	162366	8417	963	12554	-8667	15760	832
114	163	277	163408	7029	1017	12439	-7227	15446	1266
114	164	278	163380	8099	1388	12334	-7919	15128	1694
114	165	279	164726	6724	1446	12204	-6487	14824	2134
114	166	280	165006	7791	1819	12084	-7174	14516	2566
114	167	281	166645	6431	1881	11938	-5752	14223	3009
114	168	282	167220	7496	2254	11800	-6435	13928	3445
114	169	283	169137	6154	2319	11634	-5026	13650	3891
114	170	284	169989	7219	2693	11476	-5708	13373	4328



Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
114	171	285	172164	5896	2759	11288	-4314	13115	4774
114	172	286	173270	6965	3132	11105	-4999	12861	5211
114	173	287	175678	5663	3199	10892	-3626	12628	5654
114	174	288	177010	6739	3569	10681	-4319	12402	6086
114	175	289	179617	5463	3635	10437	-2971	12203	6524
114	176	290	181137	6551	4001	10193	-3678	12014	6950
114	177	291	183904	5304	4062	9914	-2361	11856	7378
114	178	292	185566	6408	4422	9631	-3089	11713	7791
114	179	293	188439	5198	4478	9310	-1812	11606	8204
114	180	294	190187	6323	4827	8982	-2570	11521	8599
114	181	295	193104	5154	4873	8612	-1341	11478	8990
114	182	296	194865	6309	5209	8232	-2140	11464	9360
114	183	297	197748	5188	5242	7806	-971	11498	9722
114	184	298	199438	6380	5560	7365	-1822	11569	10059
115	156	271	172689	9447	-2231	13459	-10111	18129	-2500
115	157	272	172405	8355	-1864	13388	-8667	17803	-2093
115	158	273	171360	9116	-1823	13323	-9393	17472	-1689
115	159	274	171397	8033	-1452	13239	-7954	17150	-1274
115	160	275	170679	8789	-1406	13161	-8670	16823	-861
115	161	276	171033	7717	-1031	13062	-7236	16506	-437
115	162	277	170635	8469	-980	12970	-7941	16186	-16
115	163	278	171299	7406	-602	12857	-6513	15876	414
115	164	279	171214	8156	-545	12748	-7210	15563	843
115	165	280	172180	7105	-165	12619	-5789	15261	1281
115	166	281	172398	7853	-103	12494	-6478	14958	1716
115	167	282	173655	6814	279	12346	-5066	14667	2160
115	168	283	174163	7563	345	12202	-5750	14377	2600
115	169	284	175697	6537	729	12034	-4349	14100	3048
115	170	285	176479	7289	798	11868	-5031	13827	3492
115	171	286	178270	6280	1183	11677	-3644	13569	3942
115	172	287	179304	7036	1254	11486	-4327	13317	4387
115	173	288	181329	6046	1637	11269	-2959	13083	4836
115	174	289	182588	6811	1710	11049	-3648	12858	5279
115	175	290	184816	5844	2090	10802	-2303	12656	5725
115	176	291	186265	6621	2161	10550	-3004	12465	6162
115	177	292	188656	5680	2537	10267	-1688	12302	6600
115	178	293	190252	6475	2603	9977	-2409	12156	7025
115	179	294	192757	5565	2971	9654	-1130	12041	7449
115	180	295	194445	6383	3030	9320	-1879	11948	7857
115	181	296	197005	5511	3387	8951	-646	11894	8261
115	182	297	198719	6357	3435	8568	-1433	11868	8644
115	183	298	201261	5529	3776	8147	-257	11887	9018
115	184	299	202919	6412	3807	7708	-1094	11942	9368

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
116	158	274	179352	9472	-703	13758	-11369	17862	-2526
116	159	275	179349	8074	-662	13672	-9934	17547	-2115
116	160	276	178269	9151	-301	13597	-10646	17225	-1708
116	161	277	178576	7764	-254	13496	-9215	16915	-1286
116	162	278	177813	8834	110	13404	-9916	16598	-869
116	163	279	178424	7460	164	13287	-8491	16294	-438
116	164	280	177970	8525	533	13179	-9182	15986	-11
116	165	281	178877	7164	592	13044	-7762	15690	427
116	166	282	178722	8226	965	12917	-8445	15390	862
116	167	283	179914	6879	1030	12762	-7034	15105	1309
116	168	284	180046	7938	1406	12615	-7710	14817	1751
116	169	285	181510	6607	1475	12439	-6308	14546	2204
116	170	286	181914	7667	1853	12269	-6981	14274	2652
116	171	287	183632	6353	1926	12070	-5592	14020	3109
116	172	288	184288	7415	2305	11874	-6265	13768	3559
116	173	289	186237	6122	2380	11648	-4893	13537	4018
116	174	290	187119	7189	2758	11423	-5570	13312	4468
116	175	291	189270	5920	2834	11167	-4219	13109	4925
116	176	292	190345	6996	3209	10910	-4907	12916	5370
116	177	293	192661	5754	3283	10619	-3584	12751	5820
116	178	294	193888	6844	3652	10325	-4289	12599	6256
116	179	295	196325	5634	3721	9995	-3000	12479	6692
116	180	296	197652	6743	4082	9660	-3731	12378	7112
116	181	297	200152	5571	4141	9287	-2486	12314	7529
116	182	298	201518	6705	4489	8906	-3253	12276	7924
116	183	299	204014	5575	4535	8485	-2062	12281	8311
116	184	300	205344	6741	4864	8053	-2877	12317	8672
117	160	277	187792	9194	-2234	14007	-9899	17633	-2535
117	161	278	187730	8133	-1864	13907	-8482	17328	-2118
117	162	279	186915	8885	-1813	13811	-9188	17019	-1702
117	163	280	187152	7834	-1438	13693	-7775	16720	-1274
117	164	281	186640	8583	-1380	13579	-8471	16418	-847
117	165	282	187167	7543	-1001	13443	-7063	16127	-409
117	166	283	186948	8290	-937	13308	-7749	15834	28
117	167	284	187757	7262	-554	13151	-6347	15553	476
117	168	285	187819	8009	-483	12995	-7026	15271	922
117	169	286	188896	6994	-96	12815	-5633	15003	1378
117	170	287	189225	7742	-21	12636	-6307	14736	1831
117	171	288	190554	6742	367	12432	-4925	14484	2293
117	172	289	191130	7494	446	12226	-5597	14237	2752
117	173	290	192690	6512	836	11994	-4230	14006	3217
117	174	291	193490	7271	917	11760	-4905	13783	3676

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
117	175	292	195252	6308	1306	11498	-3558	13580	4141
117	176	293	196245	7078	1388	11231	-4242	13387	4597
117	177	294	198177	6139	1772	10936	-2920	13217	5056
117	178	295	199325	6923	1851	10635	-3619	13062	5504
117	179	296	201383	6013	2230	10302	-2329	12936	5951
117	180	297	202639	6815	2302	9962	-3051	12828	6384
117	181	298	204772	5938	2669	9589	-1803	12754	6811
117	182	299	206077	6766	2730	9206	-2559	12704	7220
117	183	300	208221	5927	3082	8790	-1363	12693	7617
117	184	301	209506	6786	3126	8361	-2163	12713	7991
118	162	280	194927	9247	-723	14233	-11140	17427	-2536
118	163	281	195111	7888	-669	14109	-9730	17136	-2108
118	164	282	194231	8951	-302	13992	-10420	16839	-1682
118	165	283	194697	7604	-240	13848	-9015	16556	-1242
118	166	284	194105	8663	132	13710	-9695	16268	-805
118	167	285	194845	7330	200	13543	-8294	15994	-353
118	168	286	194529	8387	578	13382	-8966	15718	95
118	169	287	195532	7068	652	13193	-7573	15455	556
118	170	288	195479	8124	1034	13007	-8238	15192	1013
118	171	289	196728	6822	1114	12792	-6855	14946	1482
118	172	290	196920	7879	1499	12581	-7518	14701	1945
118	173	291	198396	6595	1582	12338	-6148	14474	2419
118	174	292	198811	7656	1968	12097	-6813	14252	2885
118	175	293	200488	6394	2053	11825	-5460	14050	3360
118	176	294	201097	7461	2436	11553	-6132	13856	3825
118	177	295	202944	6224	2522	11249	-4803	13685	4295
118	178	296	203713	7302	2901	10943	-5488	13526	4752
118	179	297	205691	6093	2981	10604	-4189	13396	5211
118	180	298	206575	7186	3352	10262	-4895	13280	5654
118	181	299	208636	6010	3424	9886	-3636	13197	6094
118	182	300	209584	7123	3781	9506	-4373	13134	6512
118	183	301	211669	5985	3840	9092	-3163	13109	6922
118	184	302	212616	7124	4179	8672	-3942	13110	7305
119	164	283	203712	9010	-2192	14371	-9705	17271	-2494
119	165	284	203800	7983	-1813	14223	-8310	16994	-2054
119	166	285	203140	8731	-1746	14075	-8994	16714	-1613
119	167	286	203496	7715	-1361	13903	-7603	16446	-1160
119	168	287	203105	8461	-1286	13732	-8278	16177	-708
119	169	288	203718	7458	-896	13536	-6893	15920	-243
119	170	289	203583	8205	-815	13339	-7560	15664	219
119	171	290	204439	7215	-421	13117	-6185	15421	693
119	172	291	204544	7965	-334	12894	-6848	15181	1164

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
119	173	292	205624	6991	60	12644	-5484	14957	1643
119	174	293	205948	7746	151	12393	-6147	14738	2119
119	175	294	207230	6790	546	12114	-4799	14536	2600
119	176	295	207748	7553	638	11832	-5467	14343	3075
119	177	296	209201	6617	1032	11523	-4141	14171	3554
119	178	297	209881	7391	1121	11210	-4821	14009	4022
119	179	298	211471	6480	1508	10868	-3523	13872	4490
119	180	299	212273	7269	1591	10522	-4221	13750	4944
119	181	300	213957	6387	1968	10148	-2960	13656	5392
119	182	301	214833	7195	2040	9768	-3687	13582	5822
119	183	302	216558	6346	2400	9361	-2473	13541	6240
119	184	303	217450	7179	2454	8948	-3239	13525	6633
120	166	286	211100	9105	-670	14444	-10915	17153	-2416
120	167	287	211383	7787	-598	14261	-9525	16893	-1959
120	168	288	210612	8842	-217	14082	-10193	16630	-1504
120	169	289	211144	7538	-137	13874	-8809	16381	-1034
120	170	290	210624	8591	248	13669	-9468	16130	-566
120	171	291	211393	7302	335	13435	-8091	15894	-86
120	172	292	211108	8355	724	13204	-8746	15658	389
120	173	293	212096	7083	816	12943	-7380	15439	877
120	174	294	212029	8137	1207	12684	-8033	15221	1359
120	175	295	213216	6885	1302	12394	-6681	15022	1849
120	176	296	213343	7944	1693	12107	-7338	14829	2332
120	177	297	214702	6712	1788	11789	-6006	14656	2820
120	178	298	214995	7778	2175	11472	-6673	14491	3296
120	179	299	216495	6571	2265	11125	-5367	14349	3774
120	180	300	216918	7648	2643	10779	-6051	14219	4235
120	181	301	218520	6468	2725	10404	-4780	14116	4693
120	182	302	219031	7560	3090	10030	-5489	14029	5130
120	183	303	220689	6413	3157	9628	-4263	13973	5558
120	184	304	221236	7523	3502	9227	-5009	13937	5957
121	167	288	220805	8175	-2132	14580	-8826	17352	-2731
121	168	289	219953	8922	-2052	14388	-9496	17098	-2270
121	169	290	220093	7932	-1659	14172	-8120	16855	-1796
121	170	291	219484	8679	-1571	13954	-8781	16611	-1323
121	171	292	219855	7701	-1173	13711	-7412	16380	-837
121	172	293	219476	8449	-1078	13467	-8067	16151	-353
121	173	294	220063	7484	-677	13198	-6707	15934	139
121	174	295	219897	8236	-578	12928	-7360	15721	628
121	175	296	220681	7287	-176	12632	-6013	15523	1126
121	176	297	220709	8043	-76	12335	-6668	15331	1616
121	177	298	221668	7112	323	12013	-5340	15156	2111

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
121	178	299	221863	7876	420	11689	-6002	14988	2596
121	179	300	222969	6964	814	11343	-4698	14841	3079
121	180	301	223301	7739	905	10995	-5376	14704	3549
121	181	302	224521	6851	1288	10624	-4104	14590	4014
121	182	303	224953	7639	1367	10254	-4806	14490	4458
121	183	304	226246	6777	1731	9864	-3576	14417	4889
121	184	305	226733	7583	1792	9475	-4311	14361	5294
122	168	290	228213	9307	-970	14688	-11381	17560	-3023
122	169	291	228266	8018	-884	14457	-10005	17326	-2543
122	170	292	227267	9070	-493	14230	-10659	17088	-2065
122	171	293	227543	7795	-399	13974	-9289	16865	-1572
122	172	294	226771	8844	-5	13721	-9935	16639	-1084
122	173	295	227257	7584	94	13439	-8573	16428	-583
122	174	296	226695	8633	491	13161	-9216	16218	-87
122	175	297	227377	7389	593	12855	-7867	16023	416
122	176	298	227008	8440	989	12553	-8511	15830	913
122	177	299	227865	7214	1091	12224	-7178	15654	1414
122	178	300	227668	8268	1483	11899	-7829	15482	1904
122	179	301	228677	7062	1581	11550	-6519	15330	2395
122	180	302	228626	8122	1964	11206	-7183	15184	2870
122	181	303	229759	6938	2051	10839	-5904	15061	3339
122	182	304	229823	8007	2418	10479	-6589	14945	3786
122	183	305	231045	6848	2489	10100	-5350	14855	4221
122	184	306	231187	7929	2835	9731	-6067	14778	4627
123	170	293	236833	9165	-2276	14454	-9956	17582	-2770
123	171	294	236706	8197	-1873	14188	-8594	17363	-2273
123	172	295	235831	8945	-1771	13922	-9240	17143	-1777
123	173	296	235912	7990	-1365	13632	-7885	16936	-1271
123	174	297	235244	8739	-1260	13343	-8527	16729	-768
123	175	298	235519	7796	-853	13031	-7183	16535	-259
123	176	299	235044	8546	-746	12721	-7826	16343	243
123	177	300	235497	7617	-343	12390	-6497	16164	748
123	178	301	235196	8371	-239	12062	-7145	15989	1244
123	179	302	235809	7458	156	11716	-5838	15830	1738
123	180	303	235663	8217	252	11375	-6497	15676	2216
123	181	304	236412	7321	635	11018	-5219	15539	2686
123	182	305	236395	8088	716	10669	-5898	15409	3135
123	183	306	237255	7212	1079	10308	-4658	15300	3569
123	184	307	237338	7988	1138	9960	-5367	15200	3973
124	172	296	243798	9345	-677	14105	-11071	17645	-2449
124	173	297	243772	8096	-571	13803	-9714	17442	-1936

Z	N	A	$\Delta M$	$S_n$	$S_p$	$Q_\alpha$	$Q_\beta$	$S_{2n}$	$S_{2p}$
124	174	298	242703	9140	-169	13507	-10347	17237	-1429
124	175	299	242870	7904	-61	13187	-9000	17045	-914
124	176	300	241995	8946	337	12874	-9632	16850	-409
124	177	301	242342	7724	444	12539	-8300	16670	101
124	178	302	241648	8765	837	12214	-8937	16489	598
124	179	303	242160	7558	937	11870	-7625	16323	1094
124	180	304	241632	8599	1319	11539	-8273	16158	1571
124	181	305	242294	7408	1406	11192	-6988	16008	2042
124	182	306	241913	8452	1771	10862	-7654	15861	2487
124	183	307	242705	7279	1838	10521	-6405	15731	2918
124	184	308	242450	8326	2176	10202	-7099	15605	3314
125	173	298	253050	8507	-1989	13919	-9001	17961	-2560
125	174	299	251870	9251	-1878	13613	-9633	17758	-2047
125	175	300	251627	8313	-1468	13290	-8291	17565	-1530
125	176	301	250642	9056	-1358	12973	-8922	17370	-1020
125	177	302	250585	8128	-954	12641	-7595	17185	-509
125	178	303	249786	8869	-849	12317	-8229	16998	-11
125	179	304	249905	7952	-455	11983	-6922	16822	481
125	180	305	249283	8693	-362	11661	-7566	16645	957
125	181	306	249567	7787	16	11333	-6284	16480	1422
125	182	307	249111	8527	90	11023	-6945	16314	1862
125	183	308	249549	7632	444	10712	-5698	16160	2283
125	184	309	249246	8374	493	10425	-6386	16007	2669
126	174	300	259919	9655	-760	13696		18274	-2638
126	175	301	259565	8425	-648	13368		18080	-2117
126	176	302	258180	9456	-248	13052		17881	-1607
126	177	303	258016	8235	-142	12721		17691	-1096
126	178	304	256827	9260	247	12407		17495	-601
126	179	305	256849	8049	344	12082		17309	-110
126	180	306	255852	9068	720	11779		17117	358
126	181	307	256057	7866	799	11471		16935	815
126	182	308	255248	8880	1151	11190		16746	1242
126	183	309	255632	7687	1206	10912		16567	1651
126	184	310	255007	8695	1527	10669		16383	2020